

Site Copy

DEPARTMENT OF THE ARMY PERMIT

Permittee: National Marine Fisheries Service

NOV 07 2012

Permit No. MVN-2011-03148-ETT

Issuing Office: New Orleans District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Dredge in Gulf of Mexico for sediment materials to be delivered via pipelines to restore Chenier Ronquille Barrier Island, in accordance with the drawings attached in thirty-eight sheets, sheet 1A dated December 22, 2011 and sheets 1-37 dated August 5, 2011.

Project Location: Chenier Ronquille Barrier Island, Latitude North: 29.31879, Longitude West:-89.79077, Barataria Bay, Plaquemines Parish, Louisiana. Four borrow sites adjacent to each other are located southwest of Chenier Ronquille and seaward of Quatre Bayou Pass in state waters of the Gulf of Mexico.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **AUG 31, 2017**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions: See Attached.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
- Section 404 of the Clean Water Act (33 U.S.C. 1344).
- Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

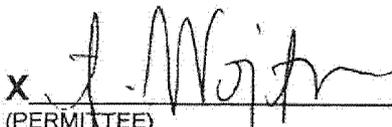
- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.

- e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
 5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.


X
10-25-2012

 (PERMITEE) (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.


November 8, 2012

 Michael V Farabee, Chief Eastern Evaluation Section (DATE)

for Edward R. Fleming, District Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

 (TRANSFEE) (DATE)

SPECIAL CONDITIONS: MVN-2011-03148-ETT

7. This authorization allows for minor deviations in construction designs and project implementation. The permittee shall coordinate with this office prior to the initiation of any changes, such as alterations or changes in scope of the proposed project, which would have unwarranted impacts to jurisdictional waters and/or wetland areas not considered under this authorization. Such alterations may require a permit modification or a separate Department of the Army permit review, prior to commencing that work. If minor deviations in project plans and/or design are allowed during construction, the applicant shall submit as-built drawings within 30-days of project completion.
8. The permittee shall provide this office with a copy of any generated post construction surveys, monitoring reports, post-ground photography, and/or post aerial photography, obtained after project completion.
9. In accordance with the permit drawings, dredge material deposited into existing vegetative wetland areas and/or tidal marsh shall be placed in a manner conducive to the re-establishment, nourishment, and/or enhancement of that habitat.
10. The permittee shall notify this office in writing within five working days after construction has been completed.
11. The permittee shall assure that contractors, foremen, and/or workers associated with project implementation are equally cognizant of the conditions and restrictions associated with this approval.
12. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
13. The permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
14. The permittee shall employ best management practices around all areas of the construction site that require earthwork to restrict sediments and other materials from entering adjacent wetlands and other waters.
15. You must install and maintain, at your expense, any safety lights, signs and signals prescribed by the US Coast Guard, through regulations or otherwise, on your authorized facilities.

SPECIAL CONDITIONS: MVN-2011-03148-ETT

16. If the proposed project, or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.) in the waterway, you are advised to notify the US Coast Guard so that a Notice to Mariners, if required, may be prepared. Notification, with a copy of your permit approval and drawings, should be mailed to the US Coast Guard, Sector New Orleans Command Center, 200 Hendee Street, New Orleans, Louisiana 70114, about 1 month before you plan to start work. Telephone inquiries can be directed to (504) 365-2281.

17. The Chitimacha Tribe of Louisiana has stated that the project area is part of the aboriginal Chitimacha homelands. If during the course of work at the site, prehistoric and/or historic aboriginal cultural materials are discovered, the applicant will contact the Chitimacha Tribe of Louisiana at Post Office Box 661, Charenton, LA 70523, and the Army Corps of Engineers, New Orleans District (CEMVN) Regulatory Branch. CEMVN, Regulatory Branch will initiate the required federal, state, and tribal coordination to determine the significance of the cultural materials and the need, if applicable, for additional cultural resource investigations.

18. The permittee shall adhere to the NMFS' *Sea Turtle and Smalltooth Sawfish Construction Conditions dated 23 March 2006* during all construction phases of this project. For the permittee's convenience a hard copy of that document is attached to this permit instrument (Attachment-A.).

19. The permittee shall adhere to the NMFS' *Measures for Reducing the Entrapment Risk of Protected Species dated 22 May 2012* during all construction phases of this project. For the permittee's convenience a hard copy of that document is attached to this permit instrument (Attachment-B.).

20. If during the construction phase of this project, a "take" occurs of a species listed by the Endangered Species Act (ESA), or if new information reveals effects of the action not previously considered, or if the identified action is subsequently modified in a manner that causes an effect to an ESA listed species or designated critical habitat in a manner to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected, consultation must be reinitiated with the National Marine Fisheries Service's ESA consultant Ryan Hendren at 725-551-5610, or by email at Ryan.Hendren@noaa.gov. The permittee shall notify this office of any such occurrence and copy this office with any correspondence, and any other information relative to such coordination.

MVN-2011-03148-ETT
Chenier Ronquille Island Restoration

ATTACHMENT-A:

SEA TURTLE and SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

(1 page)



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006

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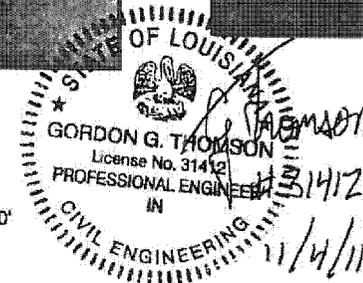
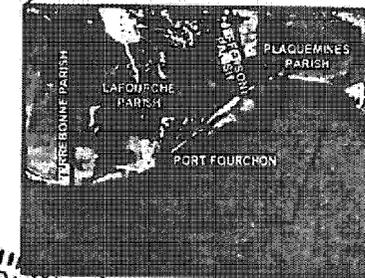
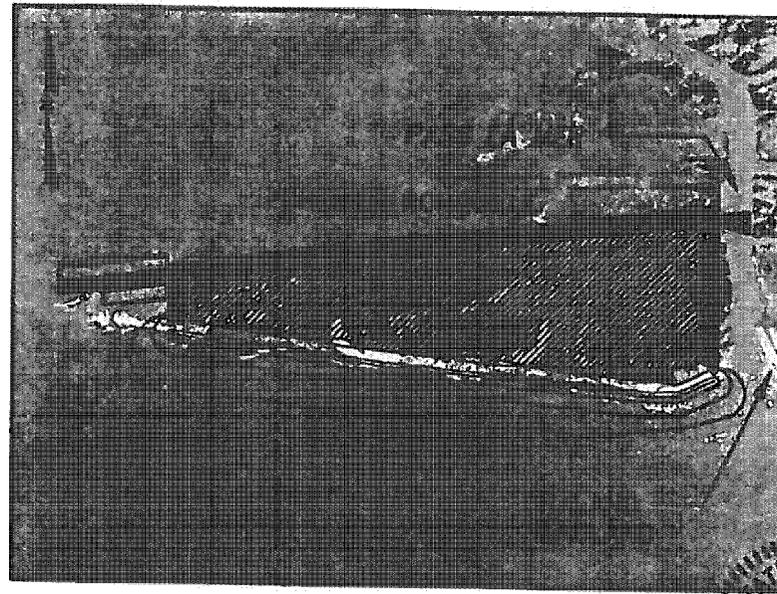
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**STATE OF LOUISIANA
COASTAL PROTECTION & RESTORATION AUTHORITY
RESTORATION ENGINEERING DIVISION**

**CHENIER RONQUILLE
BARRIER ISLAND RESTORATION PROJECT
BA-76
PLAQUEMINES PARISH**



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 BATON ROUGE, LOUISIANA 70801

**CHENIER RONQUILLE
BARRIER ISLAND RESTORATION
PROJECT**

COVER SHEET

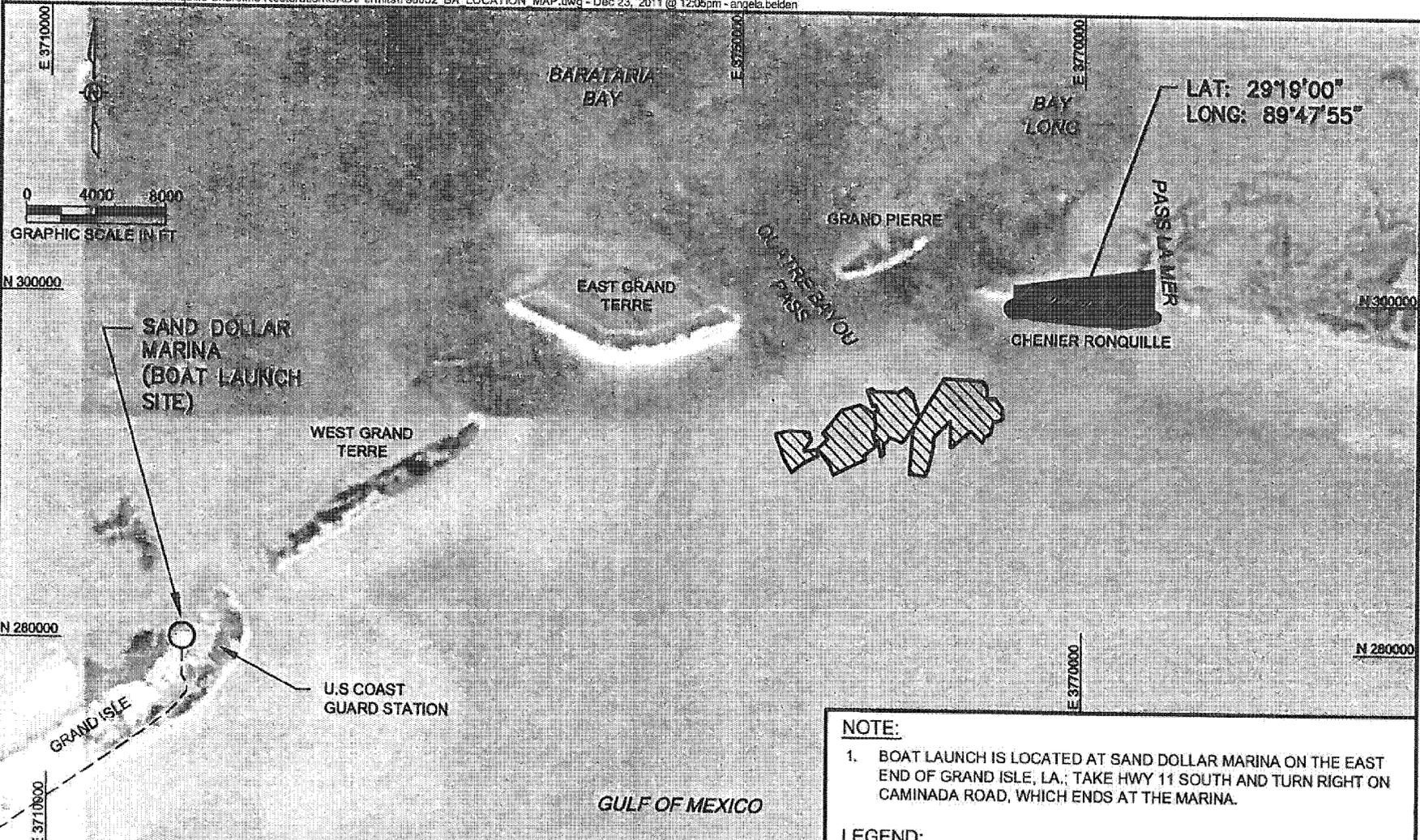
DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

DATE: 8/5/11
 SHEET 1 OF 37



NOTE:
 1. BOAT LAUNCH IS LOCATED AT SAND DOLLAR MARINA ON THE EAST END OF GRAND ISLE, LA.; TAKE HWY 11 SOUTH AND TURN RIGHT ON CAMINADA ROAD, WHICH ENDS AT THE MARINA.

LEGEND:
 PROJECT AREA
 BORROW AREAS
 ROAD

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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

LOCATION MAP
 DATE: 12-22-11
 SHEET 1A OF 37

DRAWN BY: GK

DESIGNED BY: DS

APPROVED BY: GT

GENERAL NOTES

1. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD'88) U.S. SURVEY FEET (FEET) REFERENCED TO GEOID 2009. ALL HORIZONTAL COORDINATES ARE GIVEN IN THE NORTH AMERICAN DATUM OF 1983 (NAD83, LOUISIANA STATE PLANE SOUTH ZONE U.S. FEET). FOR REFERENCE, THE BENCHMARK CONTROL POINTS ARE PROVIDED NAD83, GEODETIC COORDINATES, LATITUDE AND LONGITUDE (DEGREE, MINUTE, SECOND).
2. THE BEACH FILL BORROW AREAS CONTAIN 4,273,000 CY OF BEACH FILL MATERIAL. IT IS ESTIMATED THAT 1,965,000 CY WILL NEED TO BE DREDGED TO CONSTRUCT THE 1,310,000 CY BEACH TEMPLATE. THE BORROW AREA VOLUME EXCEEDS THE CONSTRUCTION TEMPLATE VOLUME TO ALLOW THE CONTRACTOR FLEXIBILITY IN CONSTRUCTION METHODOLOGY. ALTHOUGH THE BORROW AREA VOLUME EXCEEDS THE REQUIRED VOLUME TO CONSTRUCT THE FILL TEMPLATE, THE DESIGN TEAM REQUESTS TO PERMIT THIS ENTIRE AREA TO ALLOW FOR UNCERTAINTIES DURING CONSTRUCTION SUCH AS INCONSISTENCIES IN THE QUALITY OF THE BORROW MATERIAL, LIMITATIONS OF THE CONTRACTOR'S EQUIPMENT, ETC.
3. THE MARSH FILL BORROW AREAS CONTAIN 6,481,000 CY OF MATERIAL. IT IS ESTIMATED THAT 2,352,000 CY WILL NEED TO BE DREDGED TO CONSTRUCT THE 1,380,000 CY MARSH TEMPLATE AND BACKFILL THE ACCESS CHANNEL WITHIN THE MARSH FOOTPRINT, THAT WAS EXCAVATED TO CONSTRUCT THE PRIMARY DIKE. THE BORROW AREA VOLUME EXCEEDS THE CONSTRUCTION TEMPLATE VOLUME TO ALLOW THE CONTRACTOR FLEXIBILITY IN CONSTRUCTION METHODOLOGY. ALTHOUGH THE BORROW AREA VOLUME EXCEEDS THE REQUIRED VOLUME TO CONSTRUCT THE FILL TEMPLATE, THE DESIGN TEAM REQUESTS TO PERMIT THIS ENTIRE AREA TO ALLOW FOR UNCERTAINTIES DURING CONSTRUCTION SUCH AS INCONSISTENCIES IN THE QUALITY OF THE BORROW MATERIAL, LIMITATIONS OF THE CONTRACTOR'S EQUIPMENT, ETC.
4. THE ACCESS CHANNEL EXCAVATION VOLUME EXCEEDS THE PRIMARY DIKE TEMPLATE VOLUME TO ALLOW THE CONTRACTOR FLEXIBILITY IN PRIMARY DIKE CONSTRUCTION METHODOLOGY. THE DESIGN TEAM REQUESTS TO PERMIT THIS VOLUME TO ACCOUNT FOR CONSOLIDATION OF THE PRIMARY DIKE AND TO ALLOW THE CONTRACTOR TO EXCAVATE MATERIAL BASED ON HIS EQUIPMENT OR UNFORESEEN INCONSISTENCIES IN THE QUALITY OF THE BORROW MATERIAL.
5. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR WILL BE REQUIRED TO GRADE MATERIAL PLACED IN THE REHANDLING AND DISPOSAL AREAS TO AN ELEVATION NOT TO EXCEED +2.5 FEET, NAVD, WHICH IS CONDUCIVE TO WETLAND ESTABLISHMENT.
6. THE DESIGN TEAM WILL PROVIDE AS-BUILT EXCAVATION AND PLACEMENT VOLUMES UPON THE COMPLETION OF CONSTRUCTION.

Benchmark Control Points

Monument	Easting	Northing	Elevation
DAEBOY	3764703.43	300542.40	2.604
LATITUDE: 29°19'03.36"N LONGITUDE: 089°48'54.05"W			

SUMMARY OF ESTIMATED QUANTITIES

BASE BID

Tidal Datums at Grand Isle, Louisiana

Tidal Datum	Elevation
Mean Higher-High Water (MHHW)	0.81
Mean High Water (MHW)	0.80
Mean Sea Level (MSL)	0.29
Mean Tide Level (MTL)	0.28
Mean Low Water (MLW)	-0.24
Mean Lower-Low Water (MLLW)	-0.25

Source: NOAA (2000), <http://www.co-ops.nos.noaa.gov/benchmarks/8761724.html>

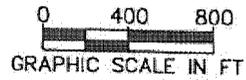
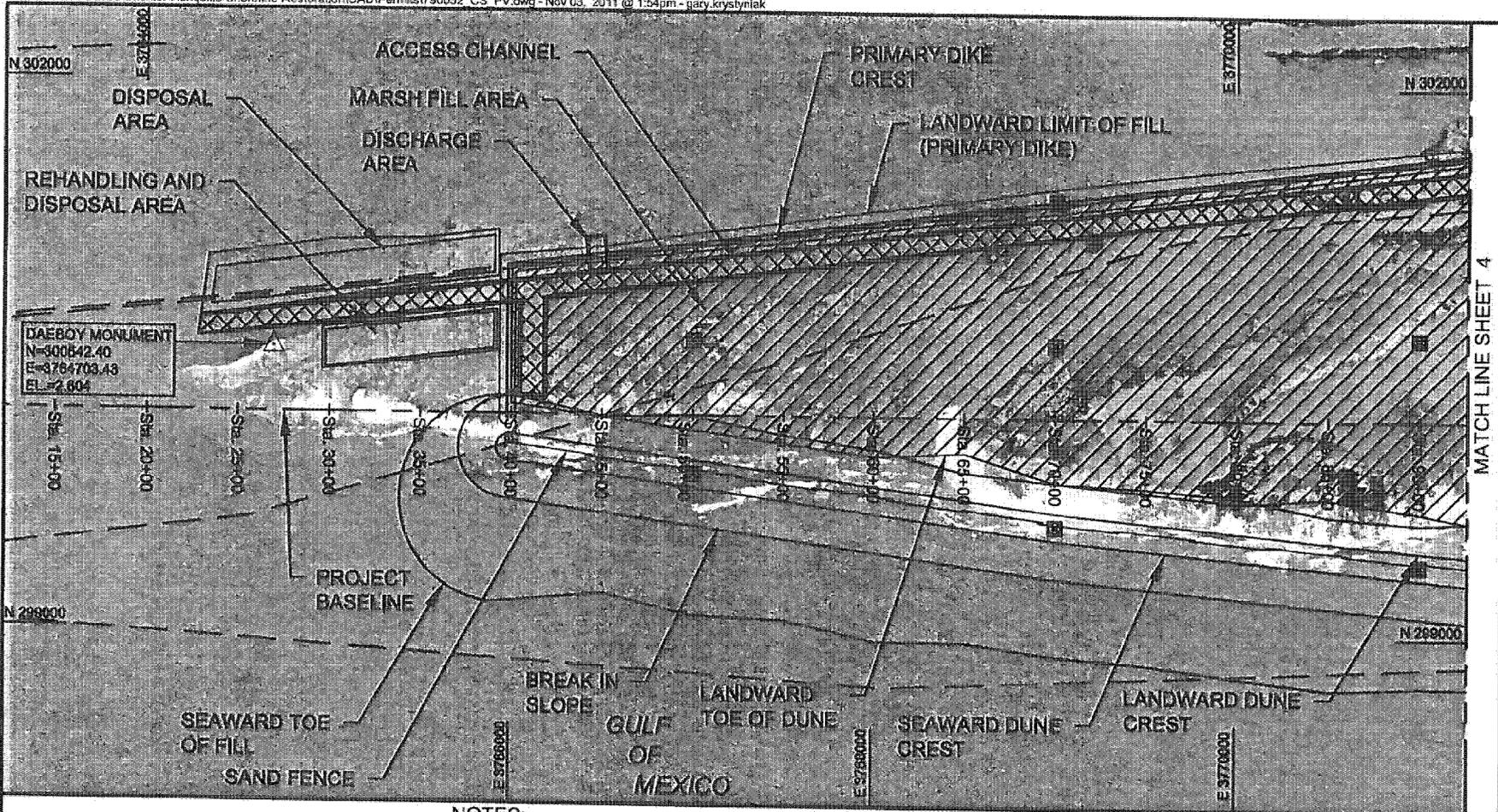
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITIES
1	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	1
2	BEACH AND DUNE FILL	CUBIC YARDS	1,310,000
3	MARSH FILL	CUBIC YARDS	1,380,000
4	PRIMARY CONTAINMENT DIKES	LINEAR FEET	11,000
5	SETTLEMENT PLATES	EACH	10
6	SAND FENCING	LINEAR FEET	8,700
7	PRE-CONSTRUCTION SURVEY	LUMP SUM	1
8	AS-BUILT SURVEY	LUMP SUM	1

QUANTITIES ARE ESTIMATES BASED ON PROJECTED CONDITIONS IN 2014, USING SURVEYS COLLECTED IN SEPTEMBER 2010. THE OWNER RESERVES THE RIGHT TO INCREASE OR DECREASE QUANTITIES BY 25% WITHOUT ADJUSTMENT OF THE UNIT PRICE.



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		STATE PROJECT NUMBER: BA-76	DATE: 8/5/11
DRAWN BY: GK	DESIGNED BY: AW	APPROVED BY: GT	FEDERAL PROJECT NUMBER: BA-76 SHEET 2 OF 37



NOTES:

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. AERIAL PHOTOGRAPH FROM NATIONAL AGRICULTURE IMAGERY PROGRAM (NAIP), 2010.
3. SEE SHEET 4 FOR PROJECT VOLUMES AND ACREAGES.
4. MINOR ALIGNMENT CHANGES THAT IMPACT LESS THAN 2 ACRES OF WETLANDS MAY BE EXECUTED IN THE FIELD.

LEGEND:

- MARSH FILL
- FILL SOURCE FOR PRIMARY DIKE
- EXISTING VERIFIED PIPELINES
- BASELINE
- SETTLEMENT PLATE

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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

PROJECT
 PLAN VIEW

DRAWN BY: GK

DESIGNED BY: AW

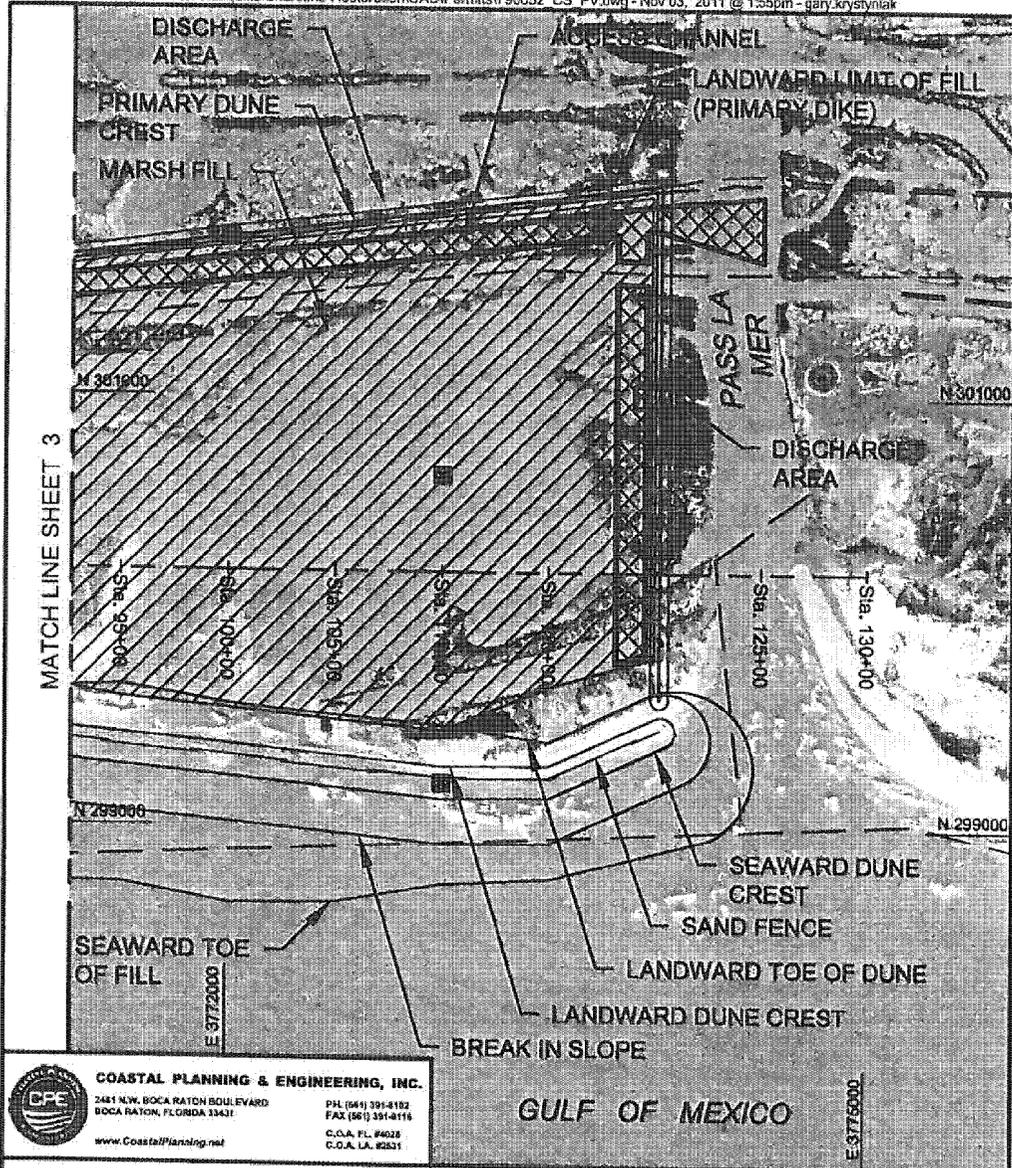
APPROVED BY: GT

STATE PROJECT NUMBER: BA-76

DATE: 8/5/11

FEDERAL PROJECT NUMBER: BA-76

SHEET 3 OF 37



NOTES:

1. COORDINATES ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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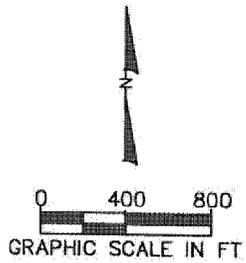
LEGEND:

-  MARSH FILL
-  FILL SOURCE FOR PRIMARY DIKE
-  EXISTING VERIFIED PIPELINES
-  BASELINE
-  SETTLEMENT PLATE

PROJECT VOLUMES & ACREAGES

- BEACH FILL VOLUME = 1,310,000 CY
- MARSH FILL VOLUME = 1,380,000 CY
- PRIMARY DIKE VOLUME = 125,000 CY
- ACCESS CHANNEL DREDGE VOLUME = 54,000 CY
(OUTSIDE AREA OF FILL)
- DISPOSAL AREA VOLUME = 92,000 CY
- REHANDLING AREA VOLUME = 25,000 CY

- AREA OF FILL = 516.0 ACRES
- AREA OF ACCESS CHANNEL DREDGING = 7.0 ACRES
(OUTSIDE AREA OF FILL)
- AREA OF DISPOSAL AND REHANDLING AREAS = 15.8 ACRES



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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

PROJECT
 PLAN VIEW

DRAWN BY: GK

DESIGNED BY: AW

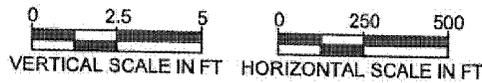
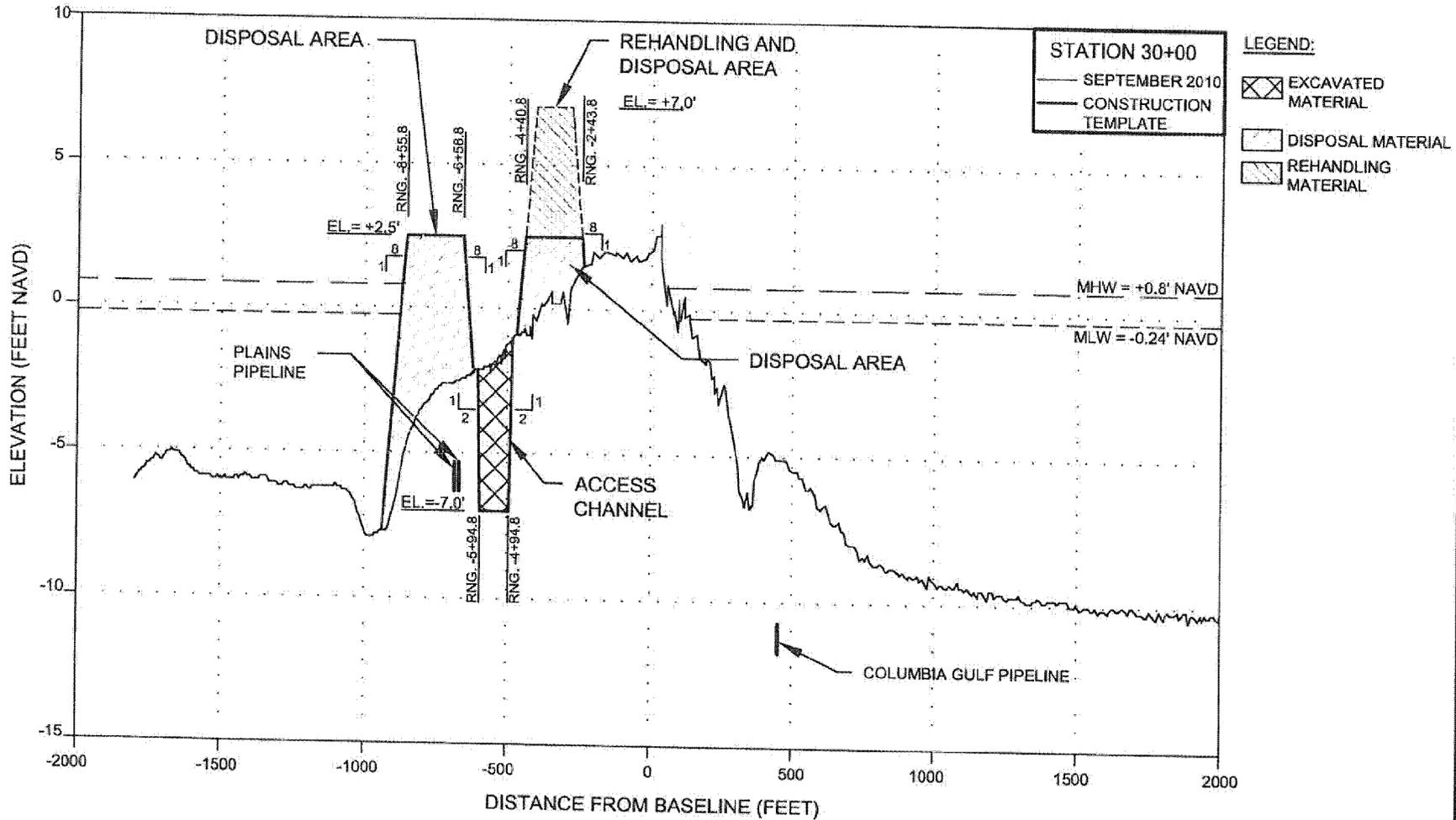
APPROVED BY: GT

STATE PROJECT NUMBER: BA-76

DATE: 8/5/11

FEDERAL PROJECT NUMBER: BA-76

SHEET 4 OF 37



- NOTES:**
- ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988, GEOID 2009.
 - LAYOUT ALL FILL AREAS BY CROSS SECTIONS.
 - POSITIVE RANGES ARE SOUTH OF BASELINE. NEGATIVE RANGES ARE NORTH OF BASELINE.

COASTAL PLANNING & ENGINEERING, INC.
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APPLICATION BY:
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 RICHARD HARTMAN
 C/O LSU. MILITARY SCIENCE BUILDING, ROOM 266
 BATON ROUGE, LA 70803
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COASTAL PROTECTION & RESTORATION AUTHORITY
RESTORATION ENGINEERING DIVISION
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

STATE PROJECT NUMBER: BA-76

FEDERAL PROJECT NUMBER: BA-76

CONSTRUCTION
 PROFILE

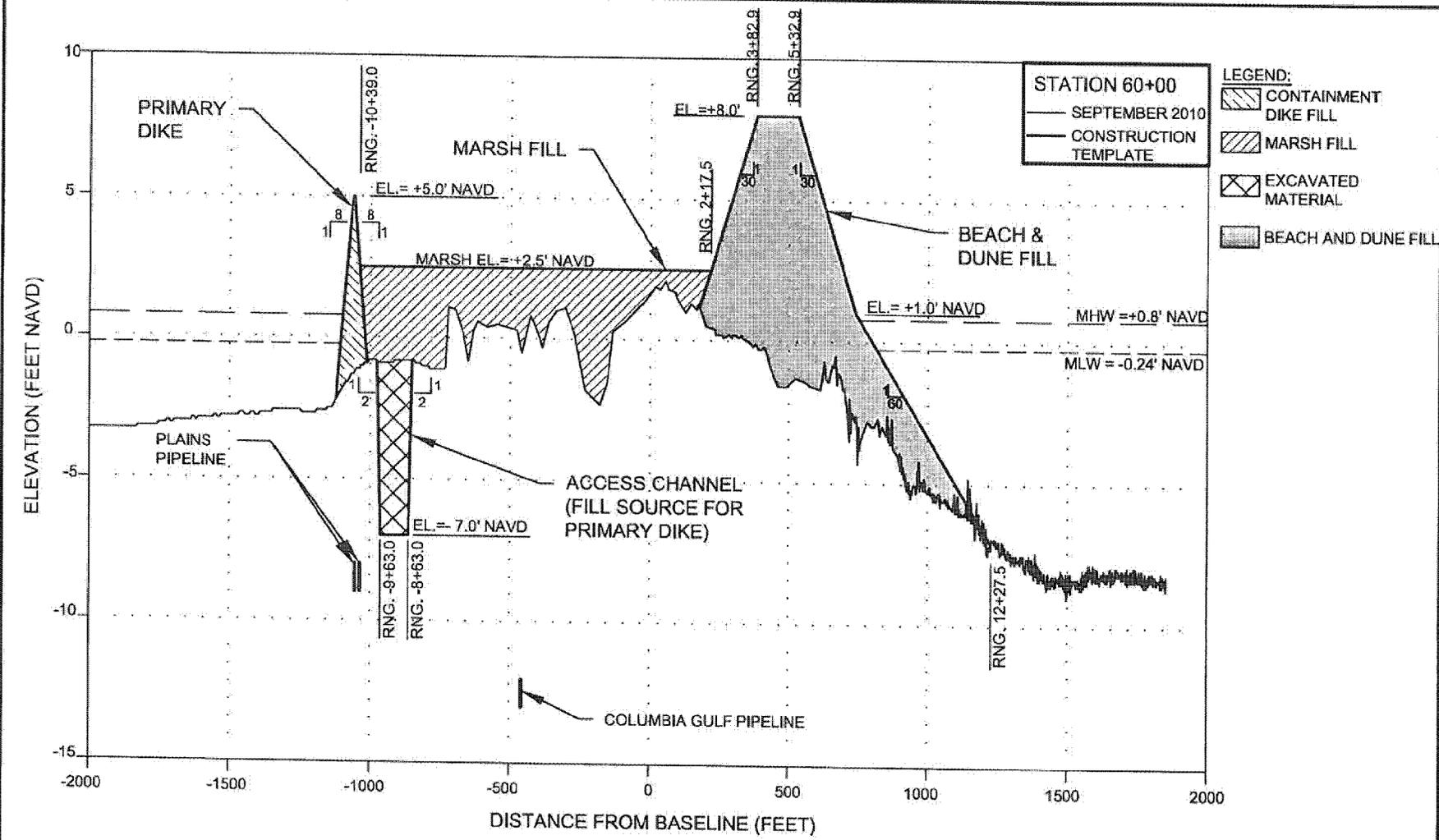
DATE: 8/5/11

SHEET 5 OF 37

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

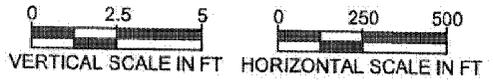


STATION 60+00
 — SEPTEMBER 2010
 — CONSTRUCTION TEMPLATE

LEGEND:
 CONTAINMENT DIKE FILL
 MARSH FILL
 EXCAVATED MATERIAL
 BEACH AND DUNE FILL

NOTES:
 1. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988, GEOID 2009.
 2. LAYOUT ALL FILL AREAS BY CROSS SECTIONS.
 3. POSITIVE RANGES ARE SOUTH OF BASELINE. NEGATIVE RANGES ARE NORTH OF BASELINE.

COASTAL PLANNING & ENGINEERING, INC.
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

CONSTRUCTION
 PROFILE
 DATE: 8/5/11

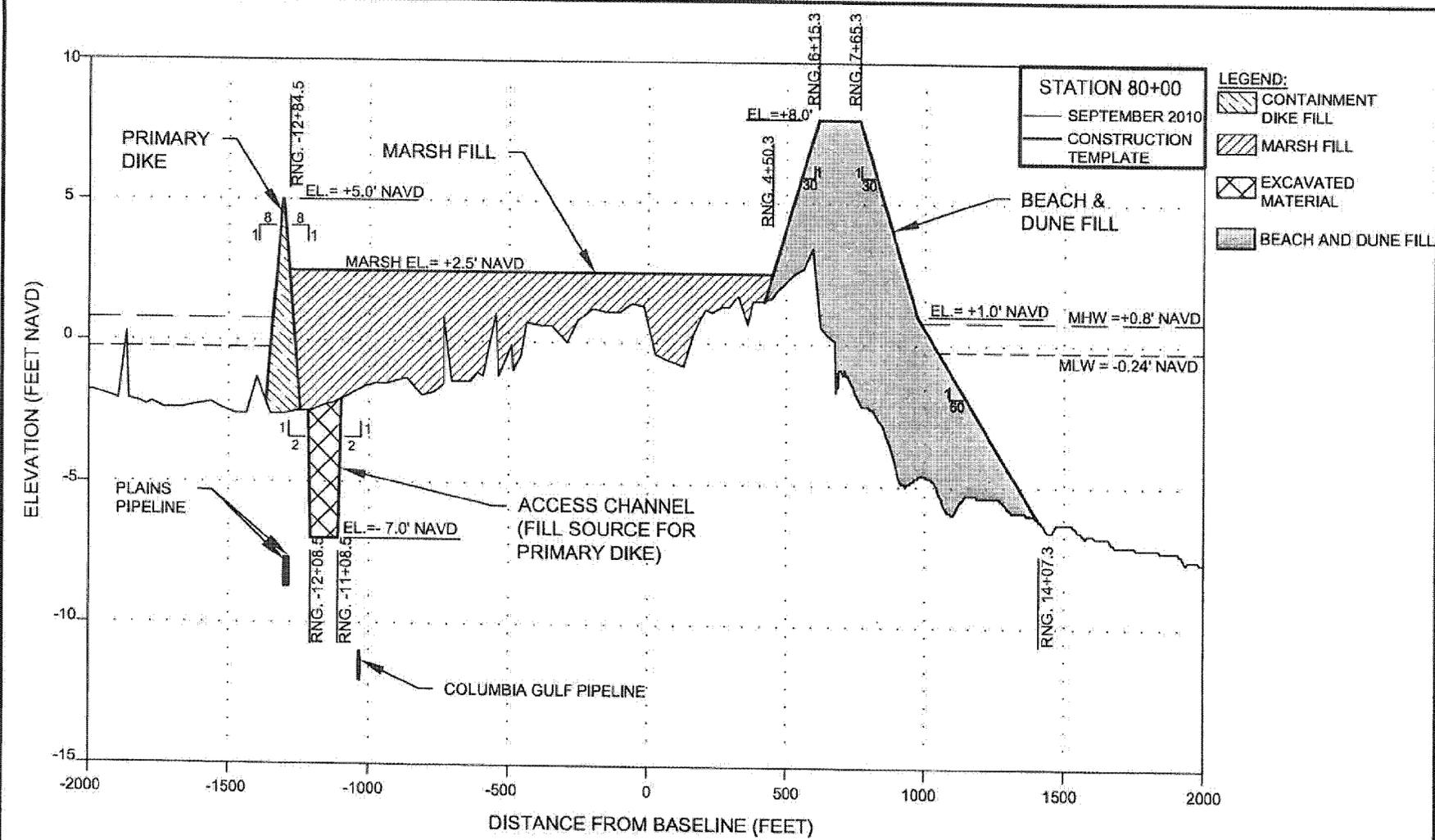
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DESIGNED BY: AW

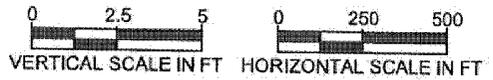
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FEDERAL PROJECT NUMBER: BA-76

SHEET 6 OF 37



COASTAL PLANNING & ENGINEERING, INC.
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- NOTES:**
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APPLICATION BY:
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

CONSTRUCTION
 PROFILE

DRAWN BY: GK

DESIGNED BY: AW

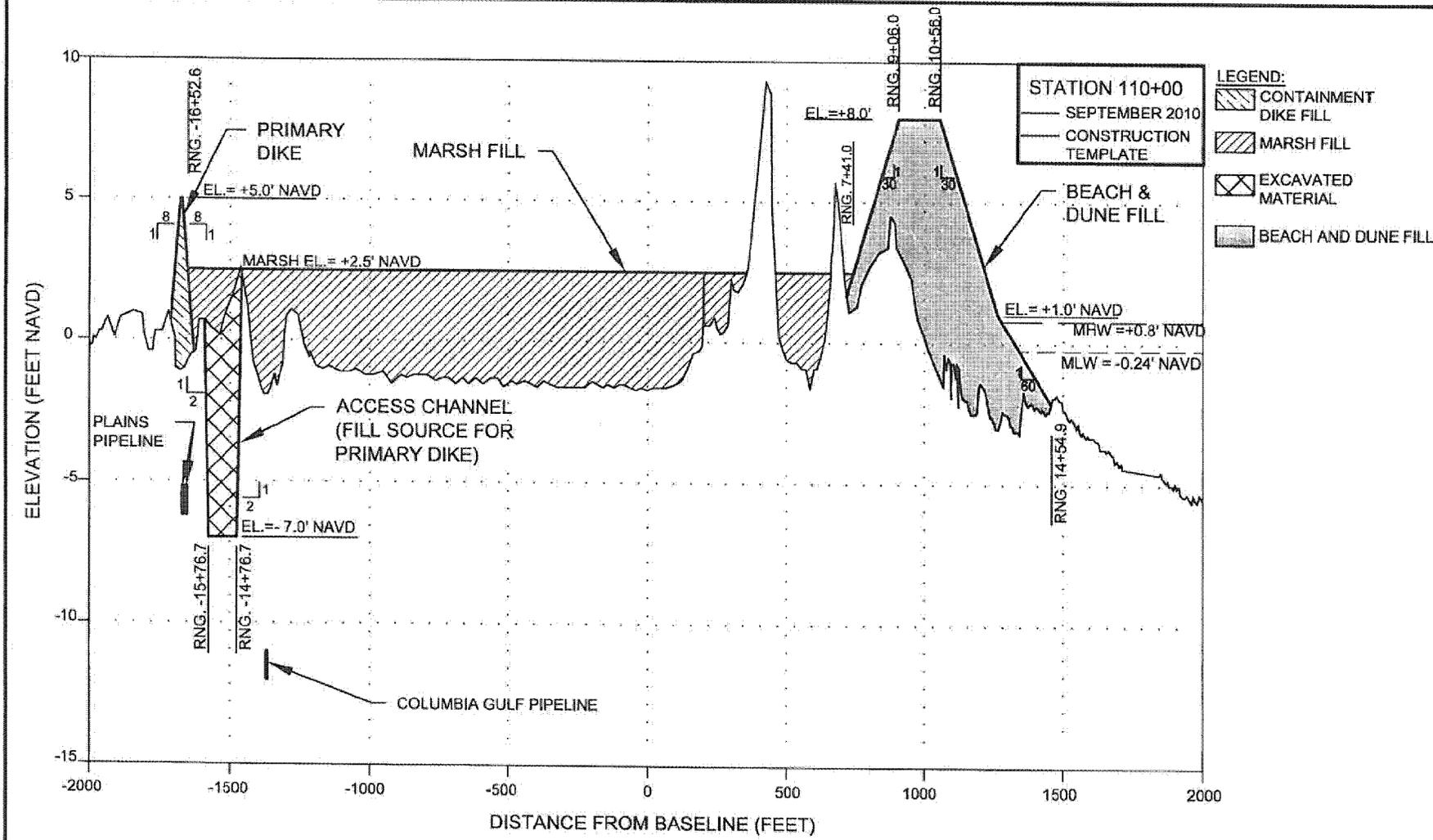
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STATE PROJECT NUMBER: BA-76

DATE: 8/5/11

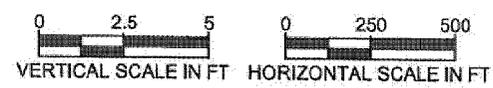
FEDERAL PROJECT NUMBER: BA-76

SHEET 7 OF 37



- NOTES:**
1. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988, GEOID 2009.
 2. LAYOUT ALL FILL AREAS BY CROSS SECTIONS.
 3. POSITIVE RANGES ARE SOUTH OF BASELINE. NEGATIVE RANGES ARE NORTH OF BASELINE.

COASTAL PLANNING & ENGINEERING, INC.
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

DESIGNED BY: AW
 APPROVED BY: GT

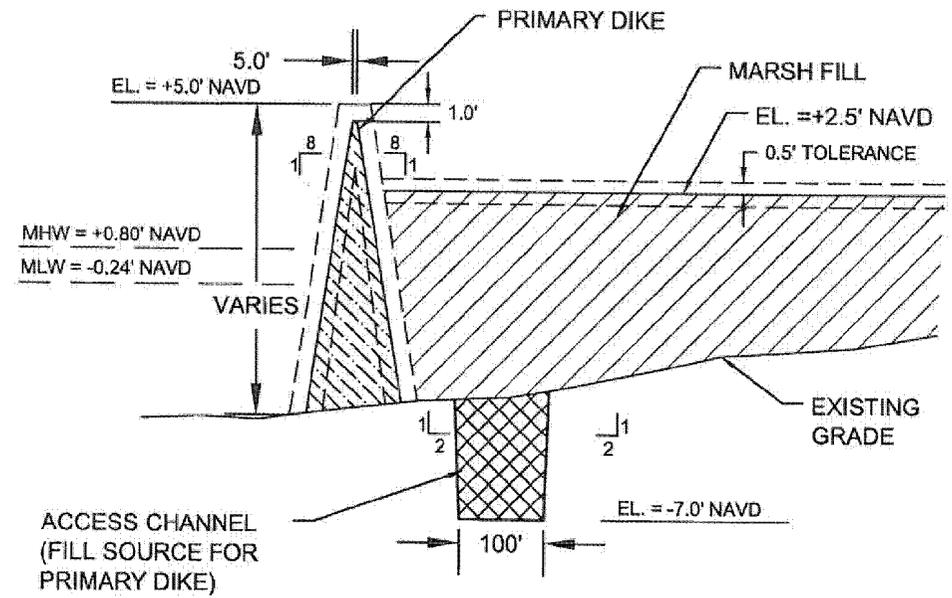
CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

CONSTRUCTION
 PROFILE

DATE: 8/5/11
 SHEET 8 OF 37

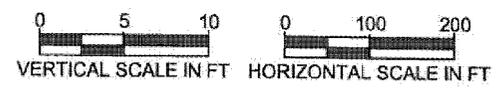
P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052 CONST_DETAILS.dwg - Nov 03, 2011 @ 2:00pm - gary.krystyniak



LEGEND:

-  CONTAINMENT DIKE FILL
-  MARSH FILL
-  EXCAVATED MATERIAL

PRIMARY CONTAINMENT DIKE & ACCESS CHANNEL DETAIL



NOTE:

1. CONTRACTOR MAY PROPOSE DIFFERENT SIDE SLOPES.

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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-78
 FEDERAL PROJECT NUMBER: BA-76

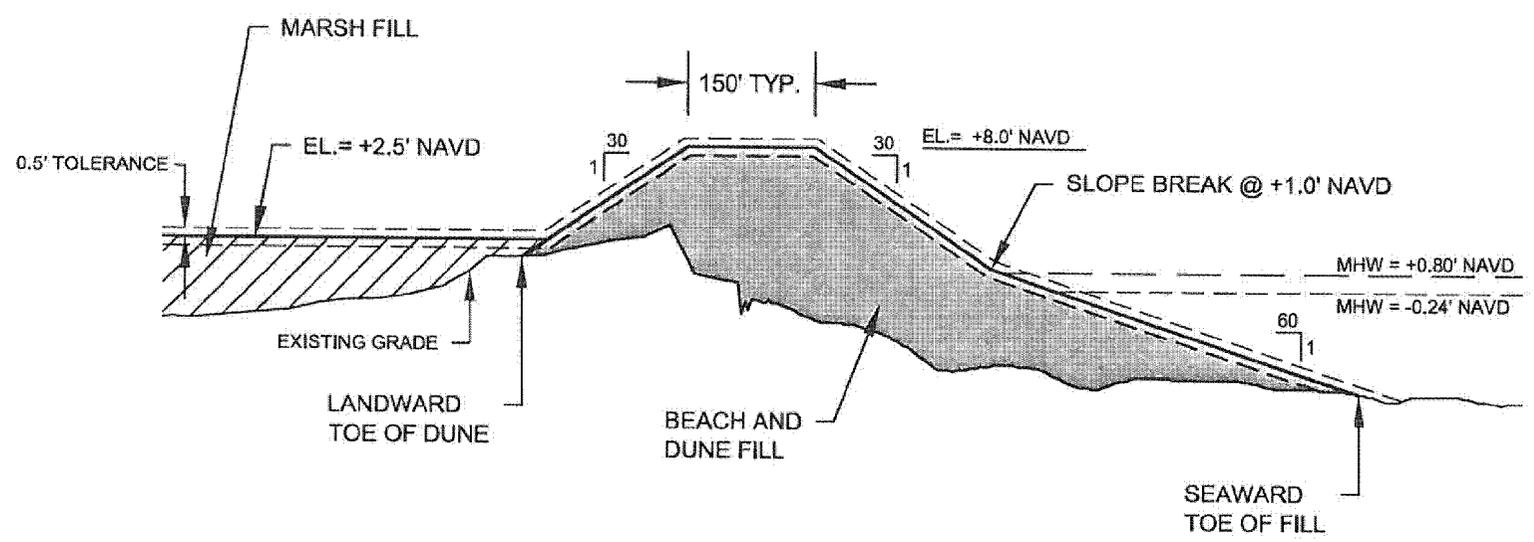
CONSTRUCTION
 DETAILS
 DATE: 8/5/11
 SHEET 9 OF 37

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

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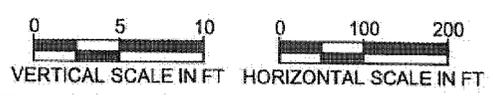


BEACH AND MARSH DETAIL

LEGEND:

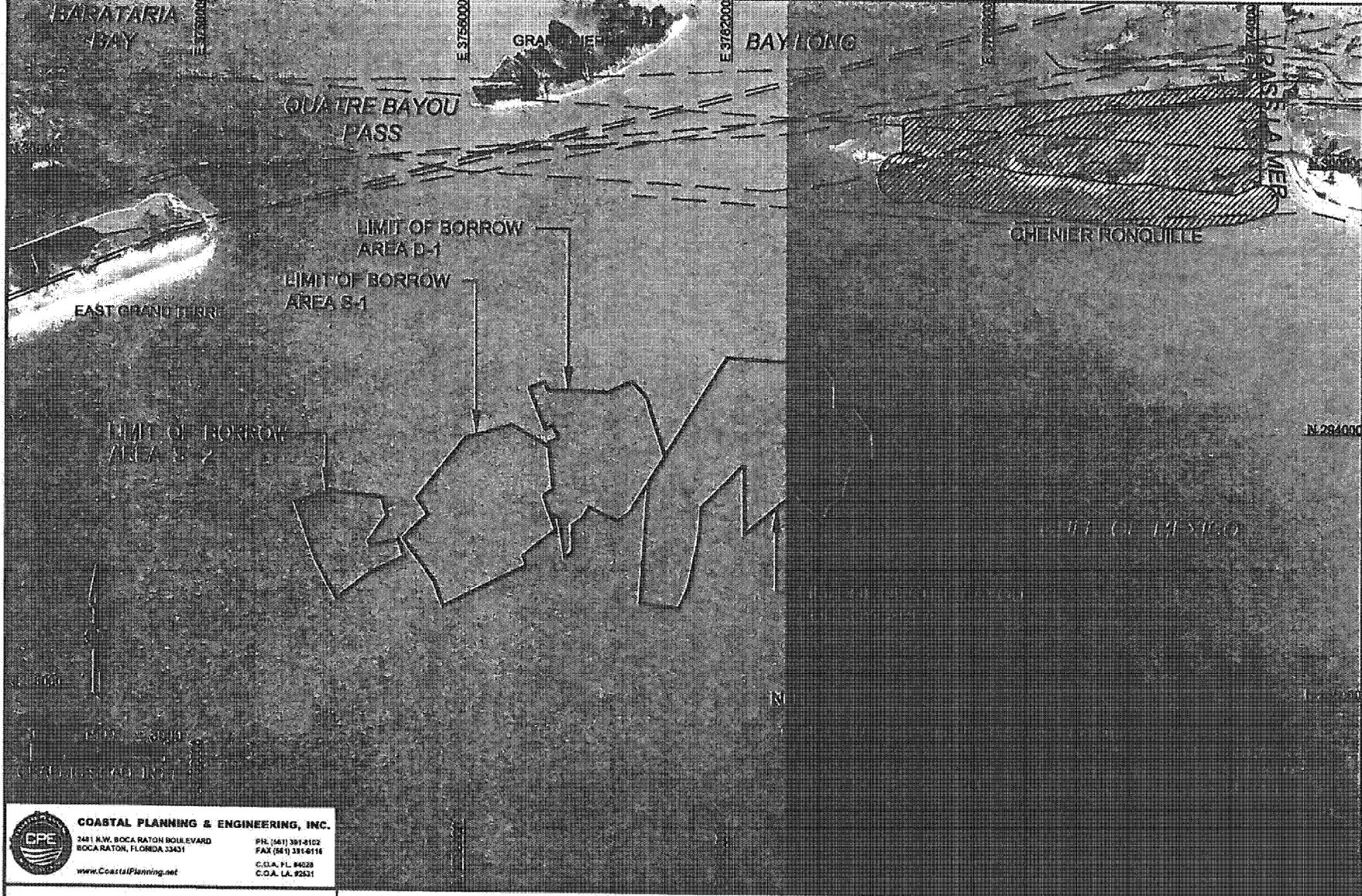
- BEACH AND DUNE FILL
- MARSH FILL

COASTAL PLANNING & ENGINEERING, INC.
 7481 N.W. BOCA RATON BOULEVARD
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APPLICATION BY: NATIONAL MARINE FISHERIES SERVICE RICHARD HARTMAN C/O LSU, MILITARY SCIENCE BUILDING, ROOM 266 BATON ROUGE, LA 70803 (225) 389-0508 FAX: (225) 389-0506	COASTAL PROTECTION & RESTORATION AUTHORITY RESTORATION ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	CHENIER RONQUILLE BARRIER ISLAND RESTORATION PROJECT	CONSTRUCTION DETAILS
		STATE PROJECT NUMBER: BA-76	DATE: 8/5/11
DRAWN BY: GK	DESIGNED BY: AW	APPROVED BY: GT	FEDERAL PROJECT NUMBER: BA-76 SHEET 10 OF 37

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COASTAL PLANNING & ENGINEERING, INC.
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APPLICATION BY: NATIONAL MARINE FISHERIES SERVICE RICHARD HARTMAN C/O LSU, MILITARY SCIENCE BUILDING, ROOM 266 BATON ROUGE, LA 70803 (225) 389-0508 FAX: (225) 389-0506		COASTAL PROTECTION & RESTORATION AUTHORITY RESTORATION ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		CHENIER RONQUILLE BARRIER ISLAND RESTORATION PROJECT		BORROW AREA LOCATION MAP	
DRAWN BY: GK		DESIGNED BY: AW		APPROVED BY: GT		STATE PROJECT NUMBER: BA-76	
						DATE: 8/5/11	
						FEDERAL PROJECT NUMBER: BA-76	
						SHEET 11 OF 37	

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VOLUME SUMMARY (CY)			
	TOTAL VOLUME	SAND VOLUME	SILT VOLUME
S1	1,651,000	1,403,000	248,000

AREA = 206.1 ACRES

DREDGE CUTS NOTED ON THIS SHEET REFER TO REMOVAL ELEVATION OF BEACH AND DUNE CONSTRUCTION MATERIAL

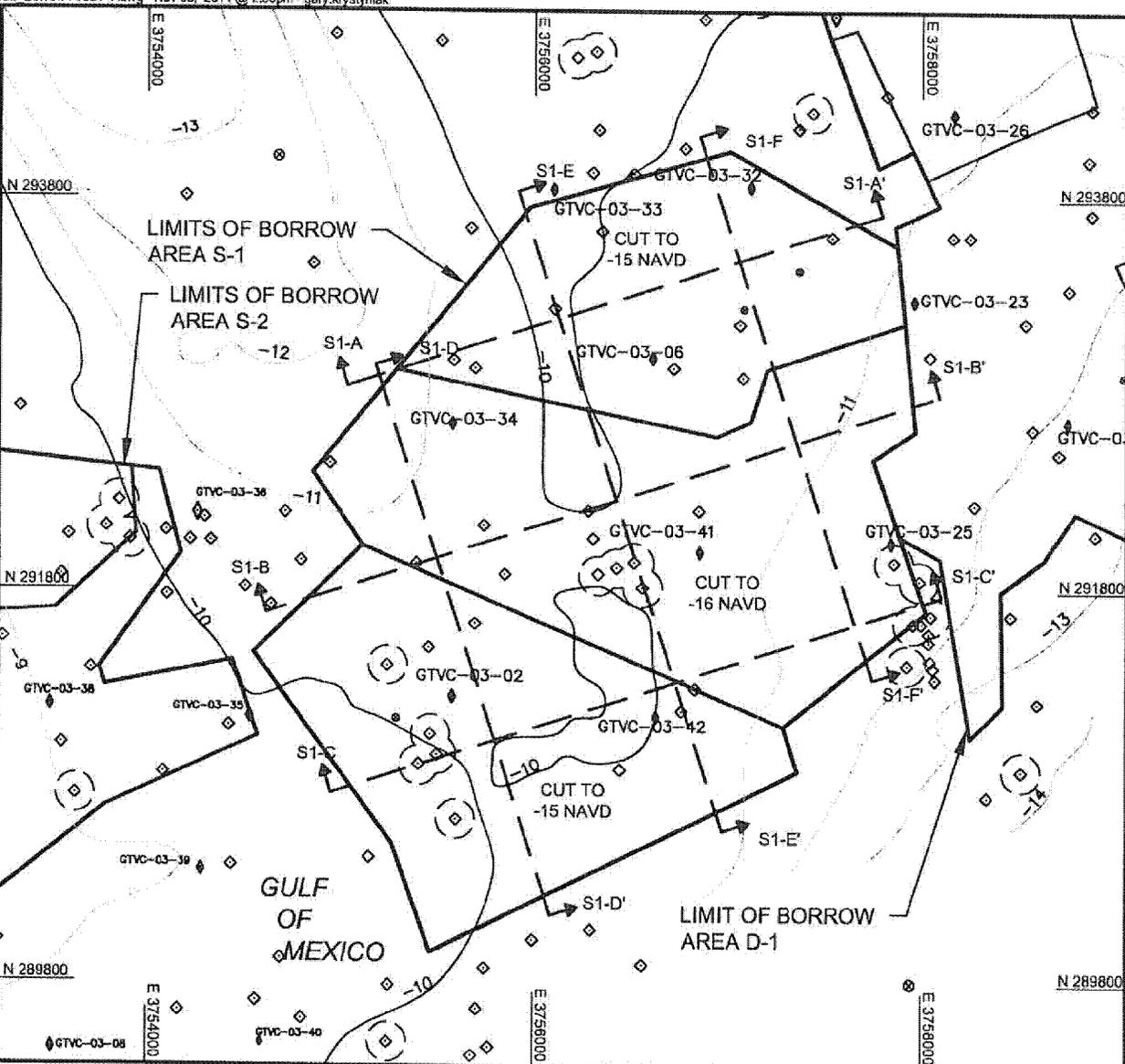
- NOTES:**
- COORDINATES SHOWN HEREON ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 1983.
 - ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988.
 - DATE OF BATHYMETRIC SURVEY, SEISMIC SCAN, SIDE SCAN SONAR, AND MAGNETOMETER SURVEY: SEPTEMBER 2003, CONDUCTED BY CPE.
 - CULTURAL RESOURCE SURVEY CONDUCTED JANUARY 2004 BY TIDEWATER ATLANTIC RESEARCH (TAR) AND CPE.
 - VOLUMES CALCULATED TO CUT DEPTH. SAND/SILT PERCENTAGE IS VARIABLE THROUGHOUT BORROW AREA. REFER TO VIBRACORES FOR SEDIMENT DISTRIBUTION WITHIN BORROW AREA.
 - CONTOURS REPRESENT BATHYMETRIC ELEVATIONS.

LEGEND:

- ◆ CPE 2002 VIBRACORE LOCATION
- WESTON 2001 VIBRACORE LOCATION
- ⊗ USGS VIBRACORE LOCATION
- ◇ MAGNETIC ANOMALY
- ⊙ MAGNETIC ANOMALY AREA OF AVOIDANCE (100' BUFFER)
- - - CROSS SECTION LINE LOCATION

0 400 800
GRAPHIC SCALE IN FT

COASTAL PLANNING & ENGINEERING, INC.
 2481 N.W. BOCA RATON BOULEVARD
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 PH: (561) 391-8102
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 C.O.A. FL #46228
 C.O.A. LA #2531



APPLICATION BY:
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 BATON ROUGE, LA 70803
 (225) 389-0508
 FAX: (225) 389-0506

**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

S1 BORROW AREA
 BATHYMETRY
 DATE: 8/5/11
 SHEET 12 OF 37

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

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VOLUME SUMMARY (CY)			
	TOTAL VOLUME	SAND VOLUME	SILT VOLUME
S1	1,651,000	1,403,000	248,000

AREA = 206.1 ACRES

DREDGE CUTS NOTED ON THIS SHEET REFER TO REMOVAL ELEVATION OF BEACH AND DUNE CONSTRUCTION MATERIAL.

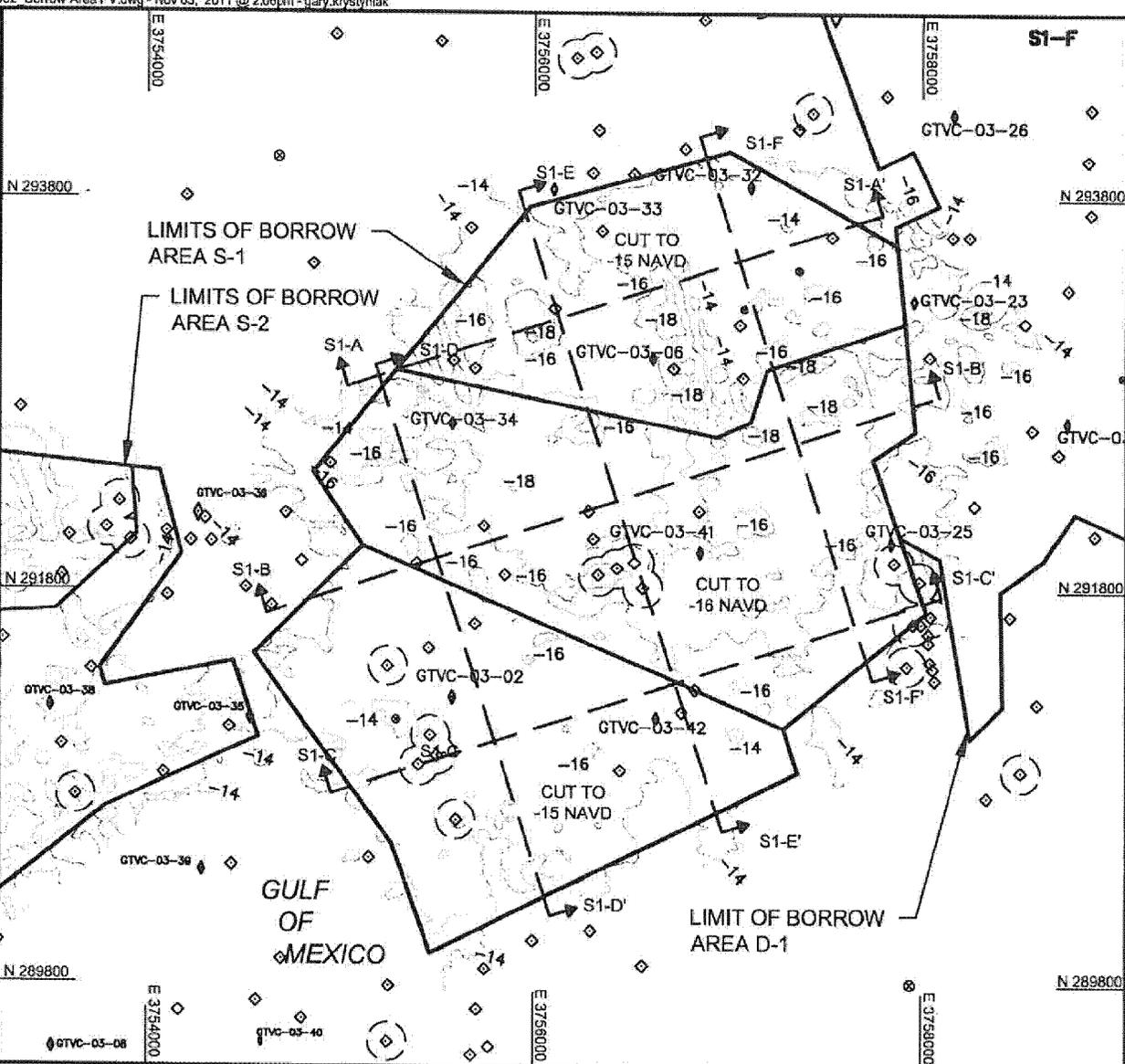
- NOTES:**
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 - VOLUMES CALCULATED TO CUT DEPTH. SAND/SILT PERCENTAGE IS VARIABLE THROUGHOUT BORROW AREA. REFER TO VIBRACORES FOR SEDIMENT DISTRIBUTION WITHIN BORROW AREA.
 - CONTOURS REPRESENT BOTTOM OF SAND LAYER.

LEGEND:

- ◆ CPE 2002 VIBRACORE LOCATION
- WESTON 2001 VIBRACORE LOCATION
- ⊗ USGS VIBRACORE LOCATION
- ◇ MAGNETIC ANOMALY
- ⊙ MAGNETIC ANOMALY AREA OF AVOIDANCE (100' BUFFER)
- - - CROSS SECTION LINE LOCATION

0 400 800
GRAPHIC SCALE IN FT

COASTAL PLANNING & ENGINEERING, INC.
 2461 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431
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 BATON ROUGE, LA 70803
 (225) 389-0508
 FAX: (225) 389-0506

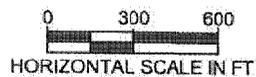
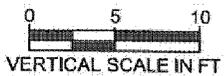
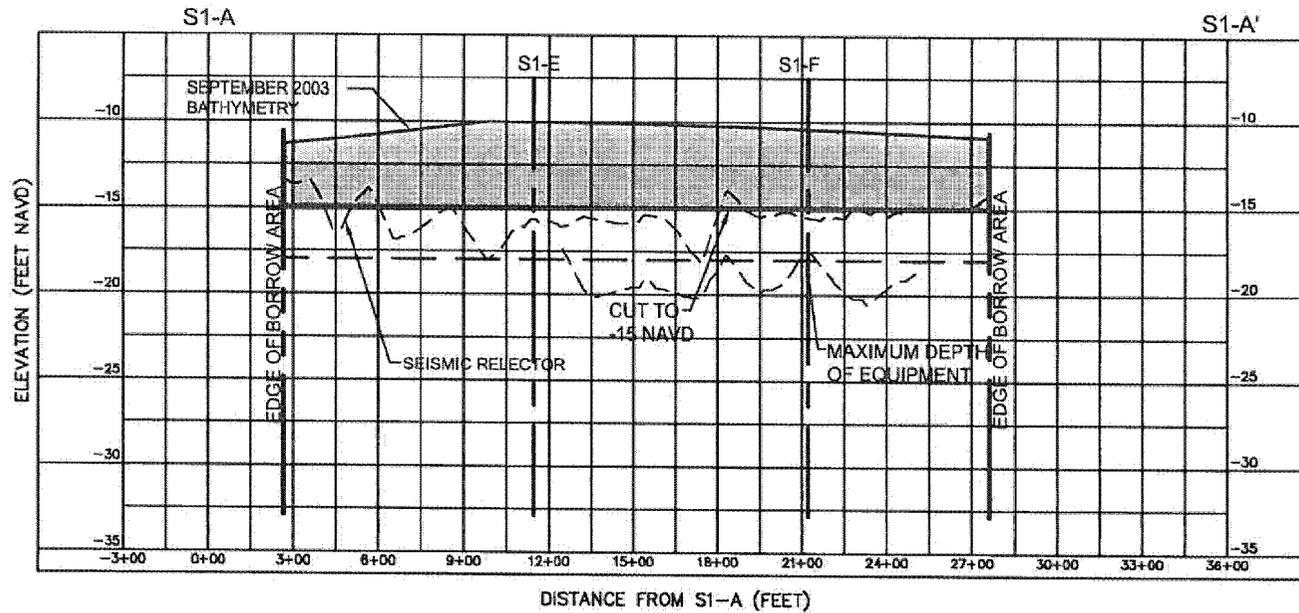
**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

S1 BORROW AREA
 BEACH FILL CUTS

DATE: 8/5/11
 SHEET 13 OF 37

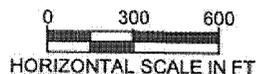
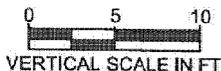
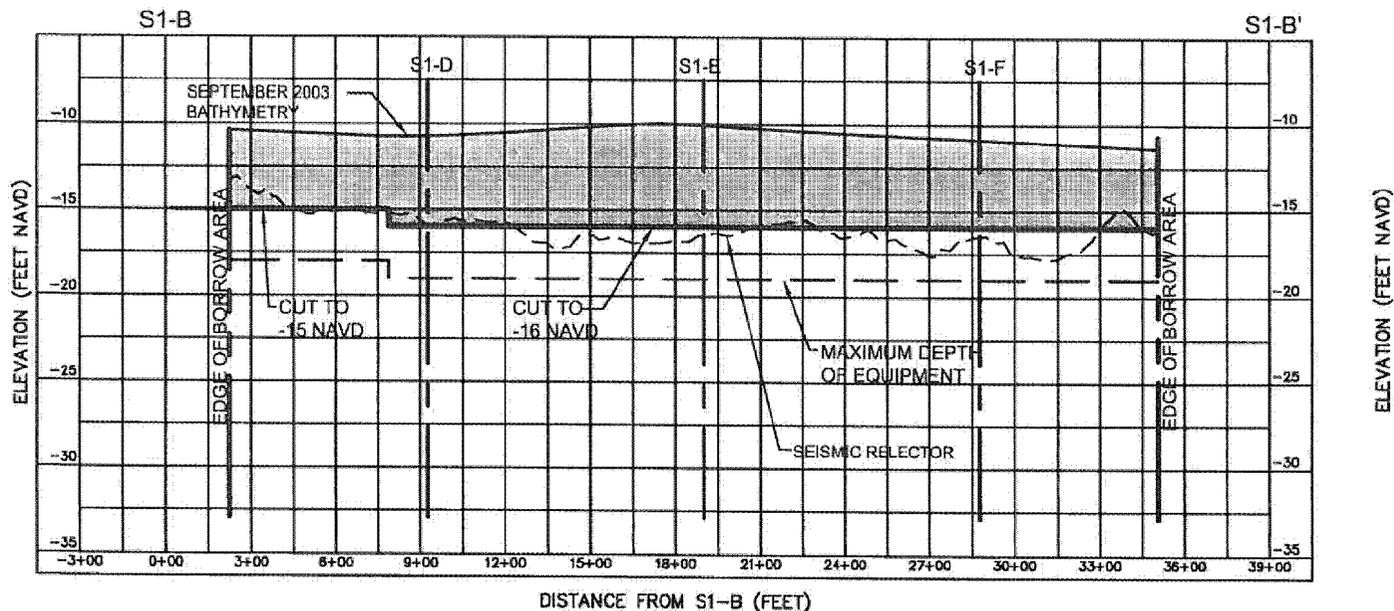


- LEGEND:**
- SEISMIC REFLECTOR
 - - - MAXIMUM DEPTH OF EQUIPMENT
 - █ BEACH FILL SEDIMENTS

- NOTES:**
1. SEE SHEETS 12 & 13 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
 3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

COASTAL PLANNING & ENGINEERING, INC.
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APPLICATION BY: NATIONAL MARINE FISHERIES SERVICE RICHARD HARTMAN C/O LSU, MILITARY SCIENCE BUILDING, ROOM 266 BATON ROUGE, LA 70803 (225) 389-0508 FAX: (225) 389-0506	COASTAL PROTECTION & RESTORATION AUTHORITY RESTORATION ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	CHENIER RONQUILLE BARRIER ISLAND RESTORATION PROJECT STATE PROJECT NUMBER: BA-76	S1 BORROW AREA CROSS SECTION DATE: 8/5/11
DRAWN BY: GK	DESIGNED BY: AW	APPROVED BY: GT	FEDERAL PROJECT NUMBER: BA-76 SHEET 14 OF 37



LEGEND:

- SEISMIC REFLECTOR
- MAXIMUM DEPTH OF EQUIPMENT
- █ BEACH FILL SEDIMENTS

NOTES:

1. SEE SHEETS 12 & 13 FOR LOCATIONS OF CROSS SECTION LINES
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
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 C.O.A. LA. #2531

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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

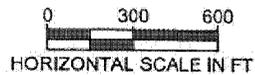
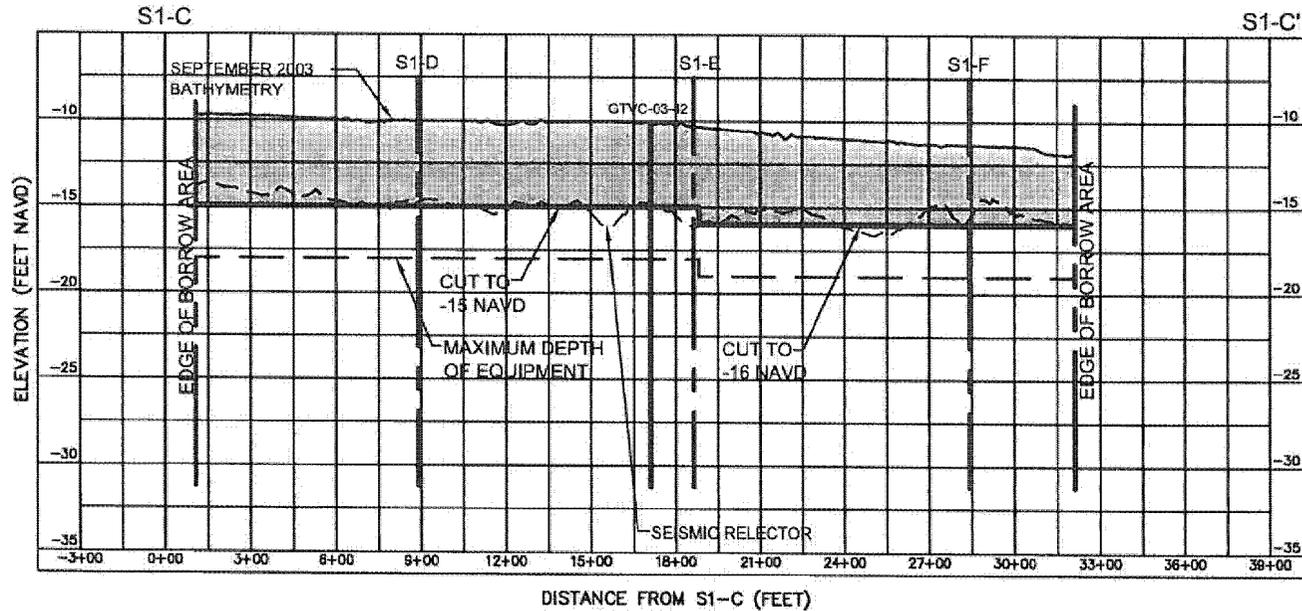
CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

S1 BORROW AREA
 CROSS SECTION
 DATE: 8/5/11
 SHEET 15 OF 37

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT



LEGEND:

- SEISMIC REFLECTOR
- MAXIMUM DEPTH OF EQUIPMENT
- █ BEACH FILL SEDIMENTS

NOTES:

1. SEE SHEETS 12 & 13 FOR LOCATIONS OF CROSS SECTION LINES
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**COASTAL PROTECTION & RESTORATION AUTHORITY
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 450 LAUREL STREET
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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

S1 BORROW AREA
 CROSS SECTION
 DATE: 8/5/11

DRAWN BY: GK

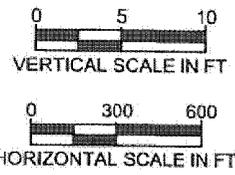
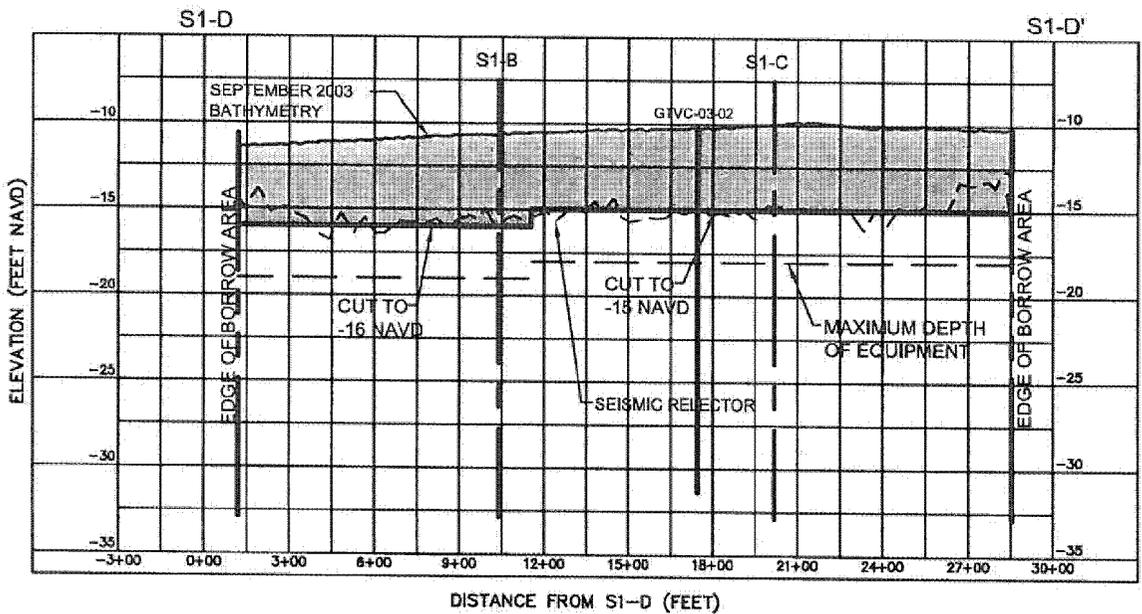
DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 16 OF 37

P:\Louisiana\79003B Chenier Roncuille Shoreline Restoration\CAD\Permits\790032 BA_XS_S1.dwg - Nov 03, 2011 @ 2:17pm - gary.krystyniak

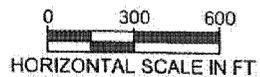
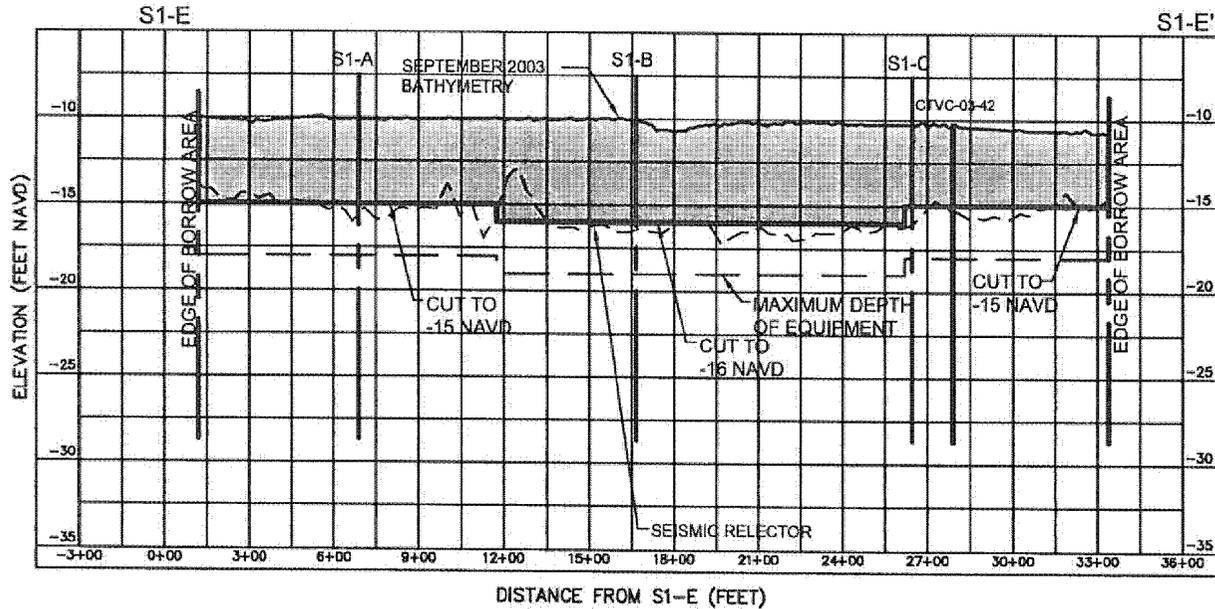


- LEGEND:**
- SEISMIC REFLECTOR
 - MAXIMUM DEPTH OF EQUIPMENT
 - █ BEACH FILL SEDIMENTS

- NOTES:**
1. SEE SHEETS 12 & 13 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
 3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

COASTAL PLANNING & ENGINEERING, INC.
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 C.O.A. LA. #2831
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APPLICATION BY: NATIONAL MARINE FISHERIES SERVICE RICHARD HARTMAN C/O LSU, MILITARY SCIENCE BUILDING, ROOM 266 BATON ROUGE, LA 70803 (225) 389-0508 FAX: (225) 389-0506	COASTAL PROTECTION & RESTORATION AUTHORITY RESTORATION ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	CHENIER RONQUILLE BARRIER ISLAND RESTORATION PROJECT	S1 BORROW AREA CROSS SECTION
		STATE PROJECT NUMBER: BA-76	DATE: 8/5/11
DRAWN BY: GK	DESIGNED BY: AW	APPROVED BY: GT	FEDERAL PROJECT NUMBER: BA-76 SHEET 17 OF 37



LEGEND:

- SEISMIC REFLECTOR
- MAXIMUM DEPTH OF EQUIPMENT
- █ BEACH FILL SEDIMENTS

NOTES:

1. SEE SHEETS 12 & 13 FOR LOCATIONS OF CROSS SECTION LINES
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

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 C.O.A. LA. #2531

APPLICATION BY:
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 BATON ROUGE, LA 70803
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

S1 BORROW AREA
 CROSS SECTION
 DATE: 8/5/11

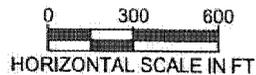
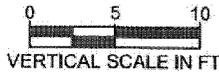
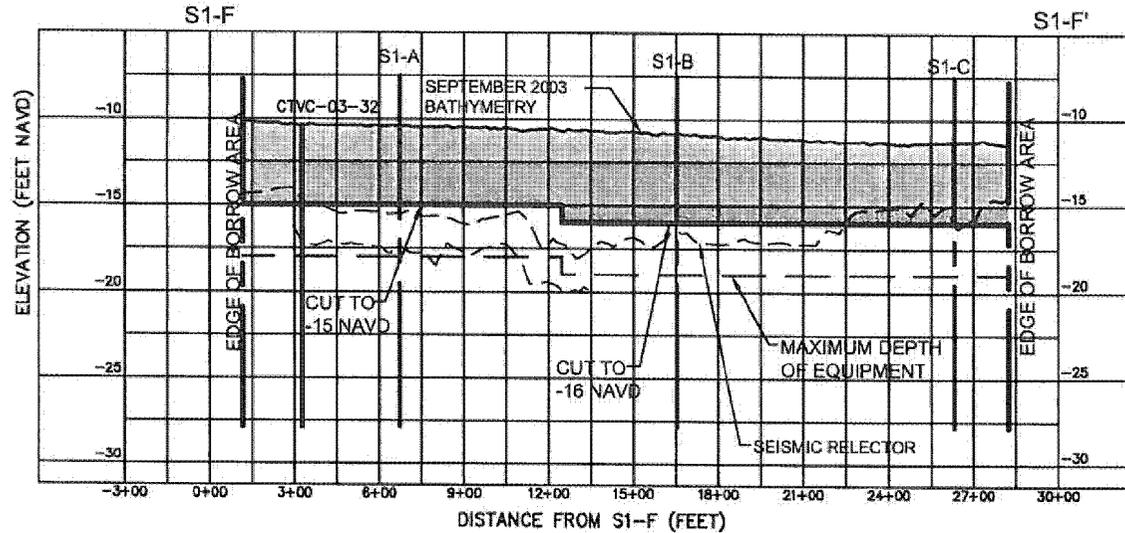
DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 18 OF 37



LEGEND:

- SEISMIC REFLECTOR
- MAXIMUM DEPTH OF EQUIPMENT
- █ BEACH FILL SEDIMENTS

NOTES:

1. SEE SHEETS 12 & 13 FOR LOCATIONS OF CROSS SECTION LINES
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.



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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

S1 BORROW AREA
 CROSS SECTION

STATE PROJECT NUMBER: BA-76

DATE: 8/5/11

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 19 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052_Borrow Area PV.dwg - Nov 03, 2011 @ 2:07pm - gary.krystyniak

VOLUME SUMMARY (CY)			
	TOTAL VOLUME	SAND VOLUME	SILT VOLUME
S2	691,000	574,000	117,000
AREA = 79.4 ACRES			

DREDGE CUTS NOTED ON THIS SHEET REFER TO REMOVAL ELEVATION OF BEACH AND DUNE CONSTRUCTION MATERIAL.

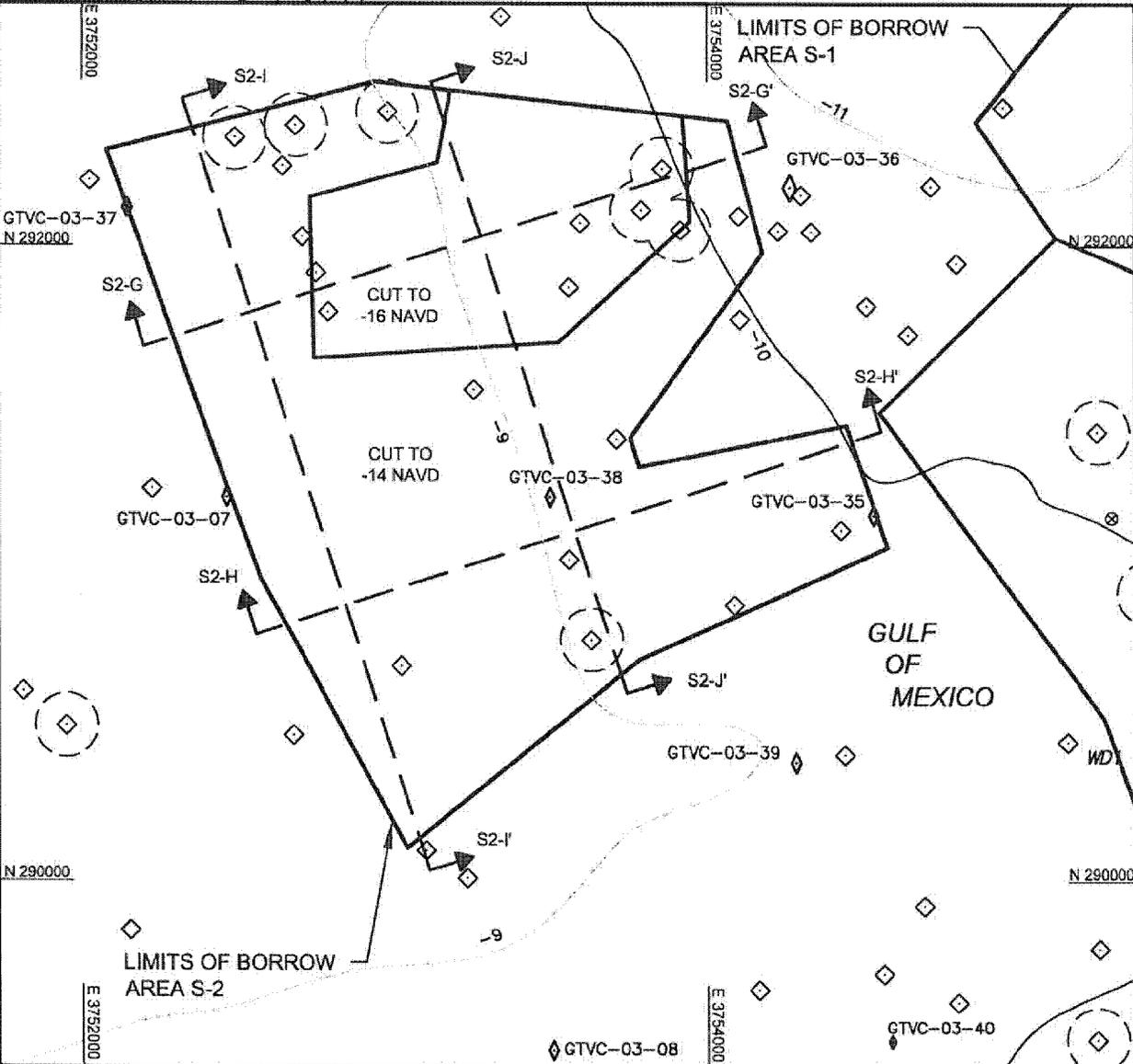
- NOTES:**
- COORDINATES SHOWN HEREON ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 1983.
 - ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988.
 - DATE OF BATHYMETRIC SURVEY, SEISMIC SCAN, SIDE SCAN SONAR, AND MAGNETOMETER SURVEY: SEPTEMBER 2003, CONDUCTED BY CPE.
 - CULTURAL RESOURCE SURVEY CONDUCTED JANUARY 2004 BY TIDEWATER ATLANTIC RESEARCH (TAR) AND CPE.
 - VOLUMES CALCULATED TO CUT DEPTH. SAND/SILT PERCENTAGE IS VARIABLE THROUGHOUT BORROW AREA. REFER TO VIBRACORES FOR SEDIMENT DISTRIBUTION WITHIN BORROW AREA.
 - CONTOURS REPRESENT BATHYMETRIC ELEVATIONS.

LEGEND:

- ◆ CPE 2002 VIBRACORE LOCATION
- ◻ WESTON 2001 VIBRACORE LOCATION
- ⊗ USGS VIBRACORE LOCATION
- ◇ MAGNETIC ANOMALY
- ⊙ MAGNETIC ANOMALY AREA OF AVOIDANCE (100' BUFFER)
- CROSS SECTION LINE LOCATION

0 250 500
GRAPHIC SCALE IN FT

COASTAL PLANNING & ENGINEERING, INC.
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

S2 BORROW AREA
 BATHYMETRY

DATE: 8/5/11
 SHEET 20 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052 Borrow Area PV.dwg - Nov 03, 2011 @ 2:48pm - gary.krystyniak

VOLUME SUMMARY (CY)			
	TOTAL VOLUME	SAND VOLUME	SILT VOLUME
S2	691,000	574,000	117,000
AREA = 79.4 ACRES			

DREDGE CUTS NOTED ON THIS SHEET REFER TO REMOVAL ELEVATION OF BEACH AND DUNE CONSTRUCTION MATERIAL

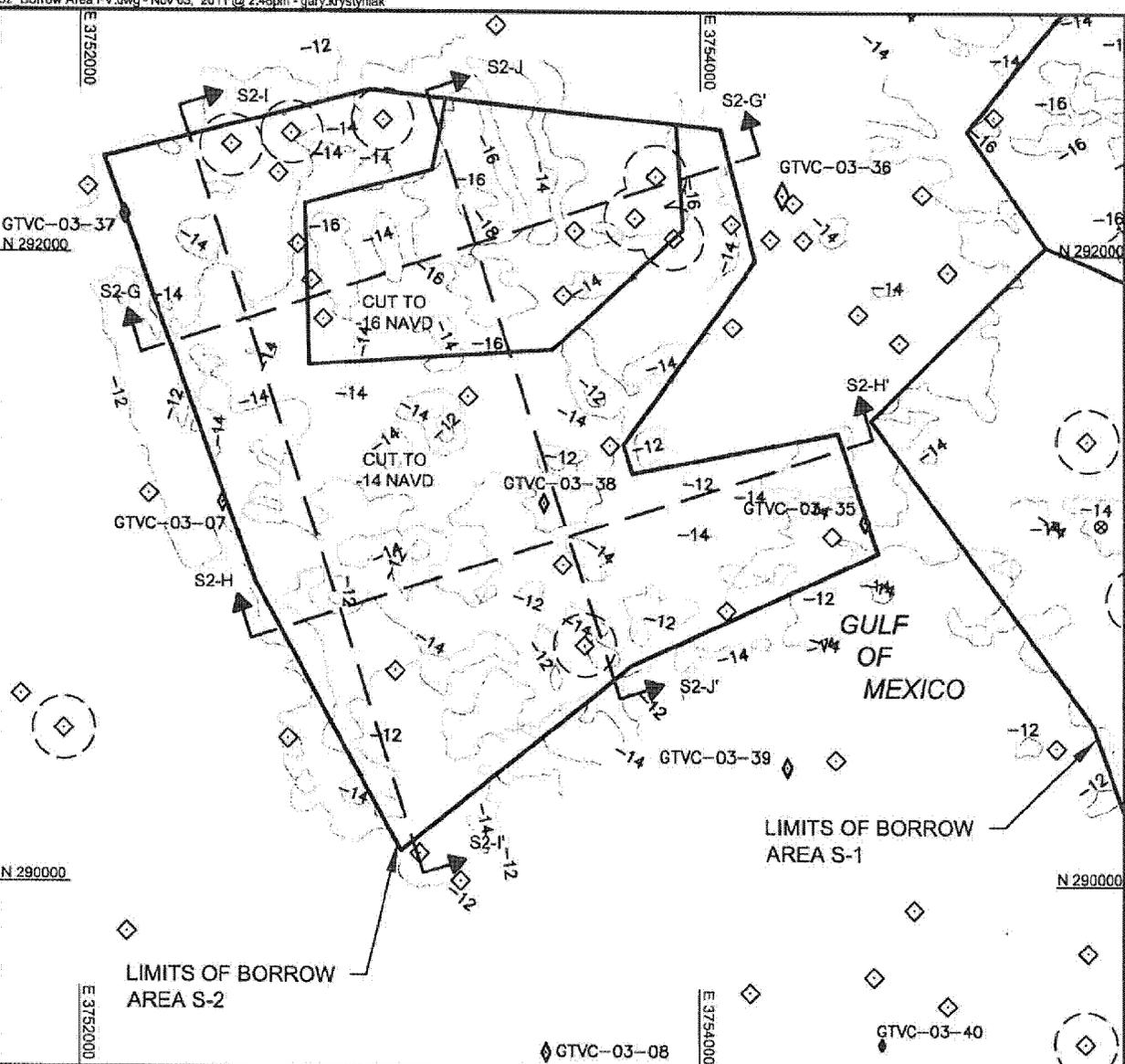
- NOTES:**
- COORDINATES SHOWN HEREON ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 1983.
 - ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988.
 - DATE OF BATHYMETRIC SURVEY, SEISMIC SCAN, SIDE SCAN SONAR, AND MAGNETOMETER SURVEY: SEPTEMBER 2003, CONDUCTED BY CPE.
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 - VOLUMES CALCULATED TO CUT DEPTH. SAND/SILT PERCENTAGE IS VARIABLE THROUGHOUT BORROW AREA. REFER TO VIBRACORES FOR SEDIMENT DISTRIBUTION WITHIN BORROW AREA.
 - CONTOURS REPRESENT BOTTOM OF SAND LAYER.

LEGEND:

- CPE 2002 VIBRACORE LOCATION
- WESTON 2001 VIBRACORE LOCATION
- USGS VIBRACORE LOCATION
- MAGNETIC ANOMALY
- MAGNETIC ANOMALY AREA OF AVOIDANCE (100' BUFFER)
- CROSS SECTION LINE LOCATION

0 250 500
GRAPHIC SCALE IN FT

COASTAL PLANNING & ENGINEERING, INC.
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

S2 BORROW AREA
 BEACH FILL CUTS

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

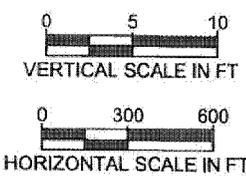
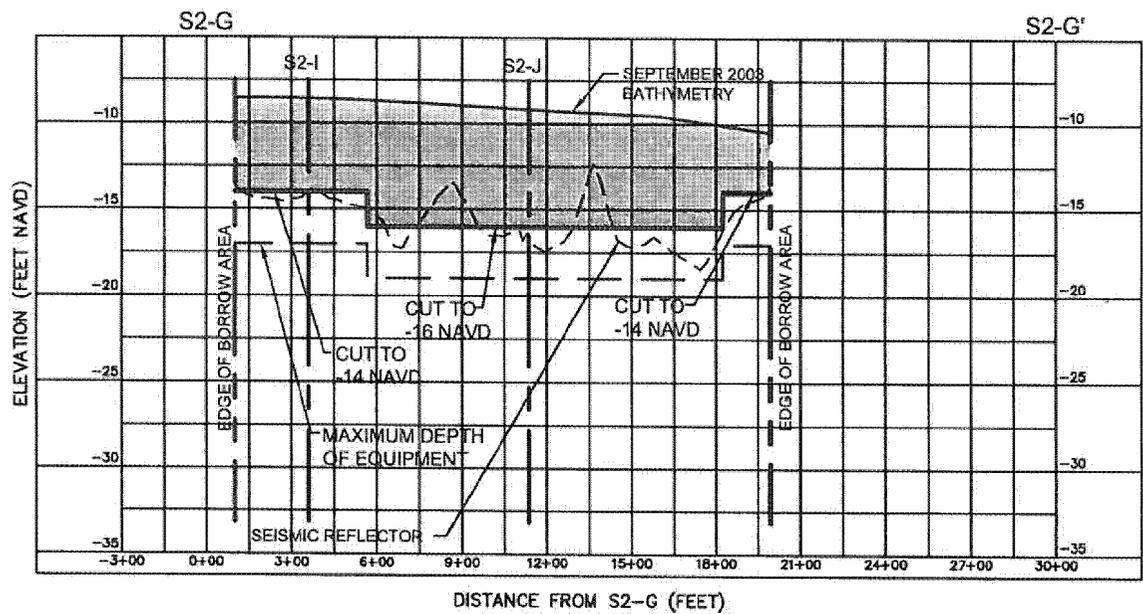
STATE PROJECT NUMBER: BA-76

DATE: 8/5/11

FEDERAL PROJECT NUMBER: BA-76

SHEET 21 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052_BA_XS_S2.dwg - Nov 03, 2011 @ 2:13pm - gary.krystyniak



- LEGEND:**
- SEISMIC REFLECTOR
 - MAXIMUM DEPTH OF EQUIPMENT
 - █ BEACH FILL SEDIMENTS

- NOTES:**
1. SEE SHEETS 20 & 21 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
 3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

BORROW AREA S2
 CROSS SECTION
 DATE: 8/5/11

DRAWN BY: GK

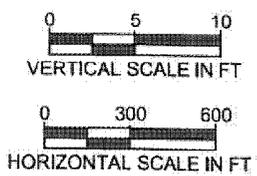
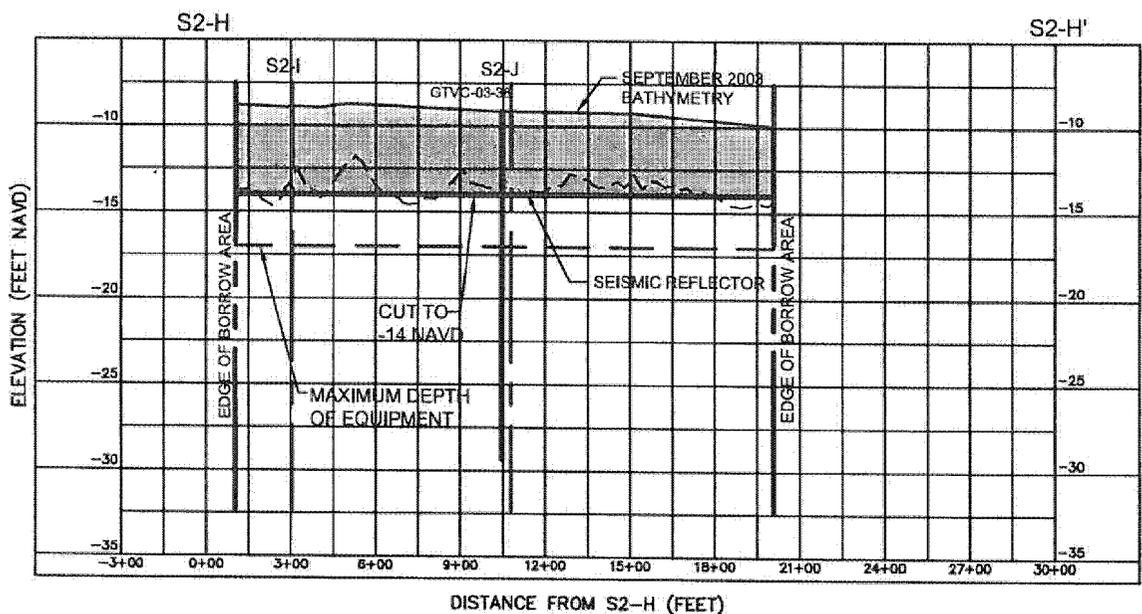
DESIGNED BY: AV

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 22 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052_BA_XS_S2.dwg - Nov 03, 2011 @ 2:13pm - gary.krystyniak



- LEGEND:**
- SEISMIC REFLECTOR
 - MAXIMUM DEPTH OF EQUIPMENT
 - █ BEACH FILL SEDIMENTS

- NOTES:**
1. SEE SHEETS 20 & 21 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
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APPLICATION BY:
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

BORROW AREA S2
 CROSS SECTION

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

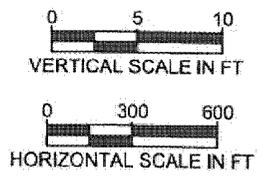
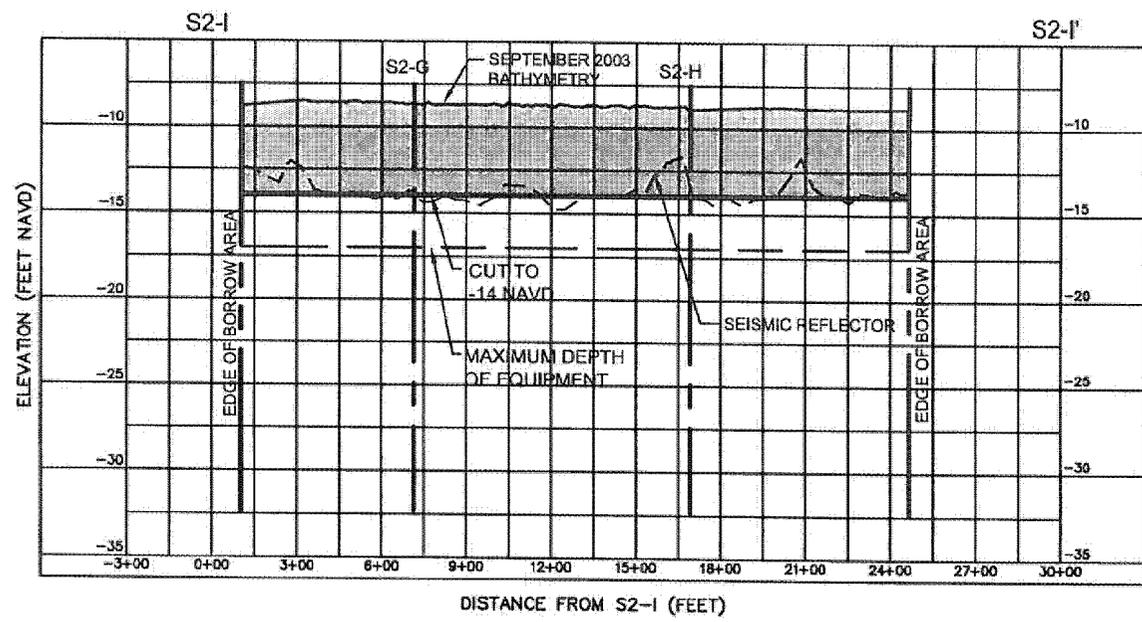
STATE PROJECT NUMBER: BA-76

DATE: 8/5/11

FEDERAL PROJECT NUMBER: BA-76

SHEET 23 OF 37

P:\Louisiana\790038 Cherier Ronquille Shoreline Restoration\CAD\Permits\790052_BA_XS_S2.dwg - Nov 03, 2011 @ 2:13pm - gary.krystyniak



- LEGEND:**
- SEISMIC REFLECTOR
 - MAXIMUM DEPTH OF EQUIPMENT
 - █ BEACH FILL SEDIMENTS

- NOTES:**
1. SEE SHEETS 20 & 21 FOR LOCATIONS OF CROSS SECTION LINES
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

BORROW AREA S2
 CROSS SECTION
 DATE: 8/5/11

DRAWN BY: GK

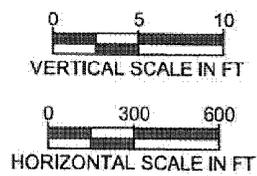
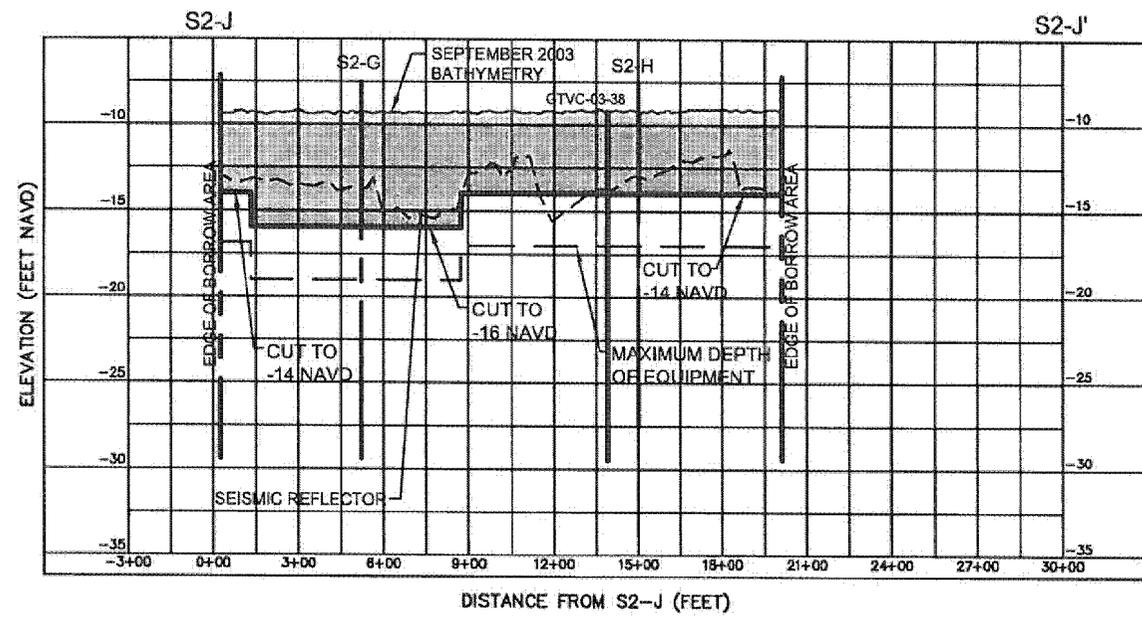
DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 24 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052 BA XS S2.dwg - Nov 03, 2011 @ 2:14pm - gary.krystyniak



- LEGEND:**
- — — SEISMIC REFLECTOR
 - — — MAXIMUM DEPTH OF EQUIPMENT
 - ▨ BEACH FILL SEDIMENTS

- NOTES:**
1. SEE SHEETS 20 & 21 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
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APPLICATION BY:
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

BORROW AREA S2
 CROSS SECTION
 DATE: 8/5/11

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 25 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052 Borrow Area PV.dwg - Nov 03, 2011 @ 2:08pm - gary.krystyniak

VOLUME SUMMARY (CY)			
	TOTAL VOLUME	SAND VOLUME	SILT VOLUME
DI BEACH FILL	1,931,000	1,531,000	400,000
DI MARSH FILL	1,393,000	200,000	1,193,000
AREA = 159.4 ACRES			

DREDGE CUTS NOTED ON THIS SHEET REFER TO REMOVAL ELEVATION OF BEACH AND DUNE CONSTRUCTION MATERIAL

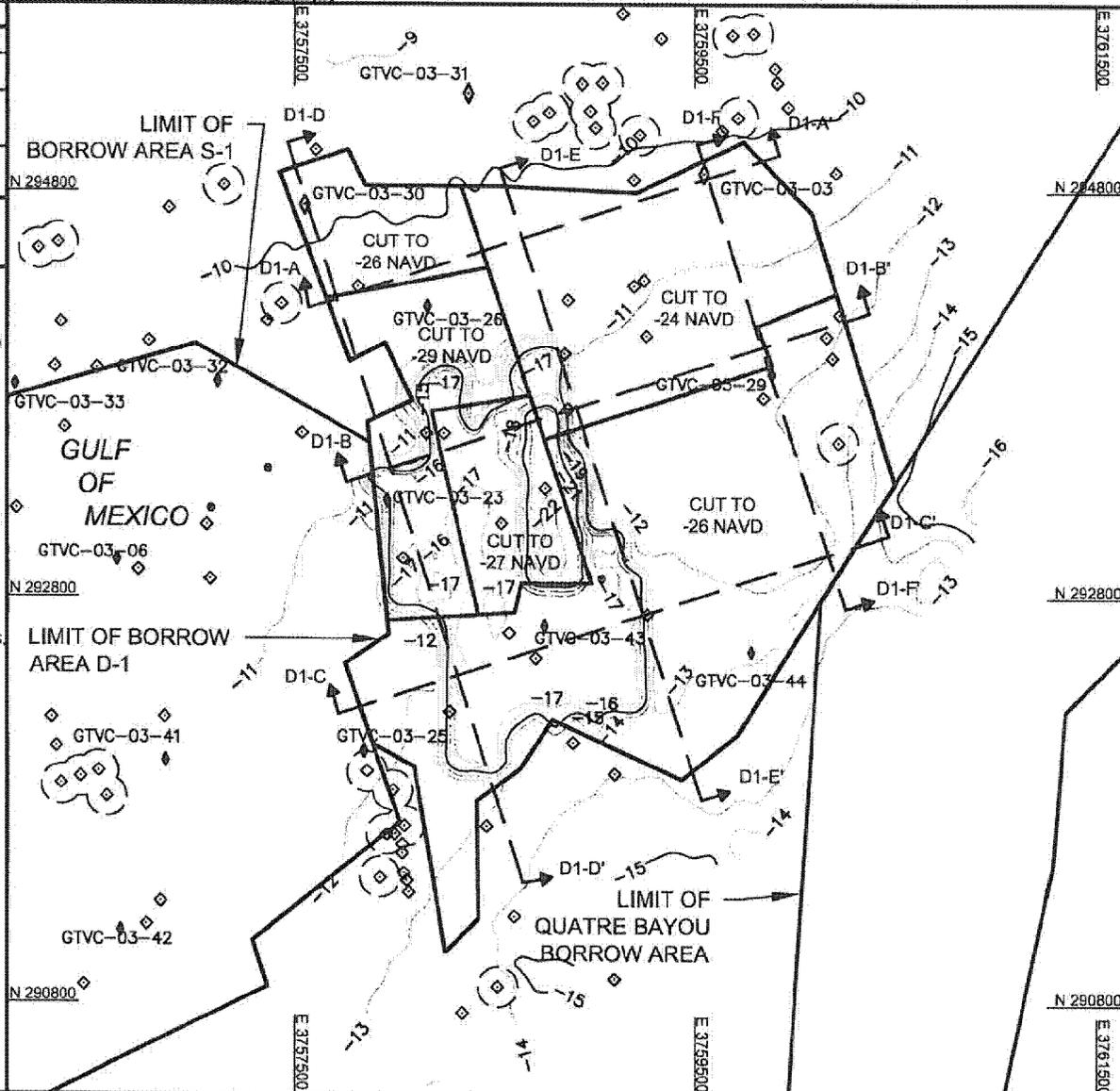
- NOTES:**
- COORDINATES SHOWN HEREON ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 1983.
 - ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988.
 - DATE OF BATHYMETRIC SURVEY, SEISMIC SCAN, SIDE SCAN SONAR, AND MAGNETOMETER SURVEY: SEPTEMBER 2003, CONDUCTED BY CPE.
 - CULTURAL RESOURCE SURVEY CONDUCTED JANUARY 2004 BY TIDEWATER ATLANTIC RESEARCH (TAR) AND CPE.
 - VOLUMES CALCULATED TO CUT DEPTH. SAND/SILT PERCENTAGE IS VARIABLE THROUGHOUT BORROW AREA. REFER TO VIBRACORES FOR SEDIMENT DISTRIBUTION WITHIN BORROW AREA.
 - CONTOURS REPRESENT BATHYMETRIC ELEVATIONS.

LEGEND:

- ◆ CPE 2002 VIBRACORE LOCATION
- WESTON 2001 VIBRACORE LOCATION
- ⊗ USGS VIBRACORE LOCATION
- ◇ MAGNETIC ANOMALY
- ⊙ MAGNETIC ANOMALY AREA OF AVOIDANCE (100' BUFFER)
- - - CROSS SECTION LINE LOCATION

GRAPHIC SCALE IN FT

COASTAL PLANNING & ENGINEERING, INC.
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 C.O.A. LA #1531
 www.CoastalPlanning.net



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 (225) 389-0508
 FAX: (225) 389-0506

**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

D1 BORROW AREA
 BATHYMETRY

DATE: 8/5/11
 SHEET 26 OF 37

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

P:\Louisiana\790058 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052 Borrow Area PV.dwg - Nov 03, 2011 @ 2:08pm - gary.krystniak

VOLUME SUMMARY (CY)			
	TOTAL VOLUME	SAND VOLUME	SILT VOLUME
DI BEACH FILL	1,931,000	1,531,000	400,000
DI MARSH FILL	1,393,000	200,000	1,193,000
AREA = 159.4 ACRES			

DREDGE CUTS NOTED ON THIS SHEET REFER TO REMOVAL ELEVATION OF MARSH CONSTRUCTION MATERIAL

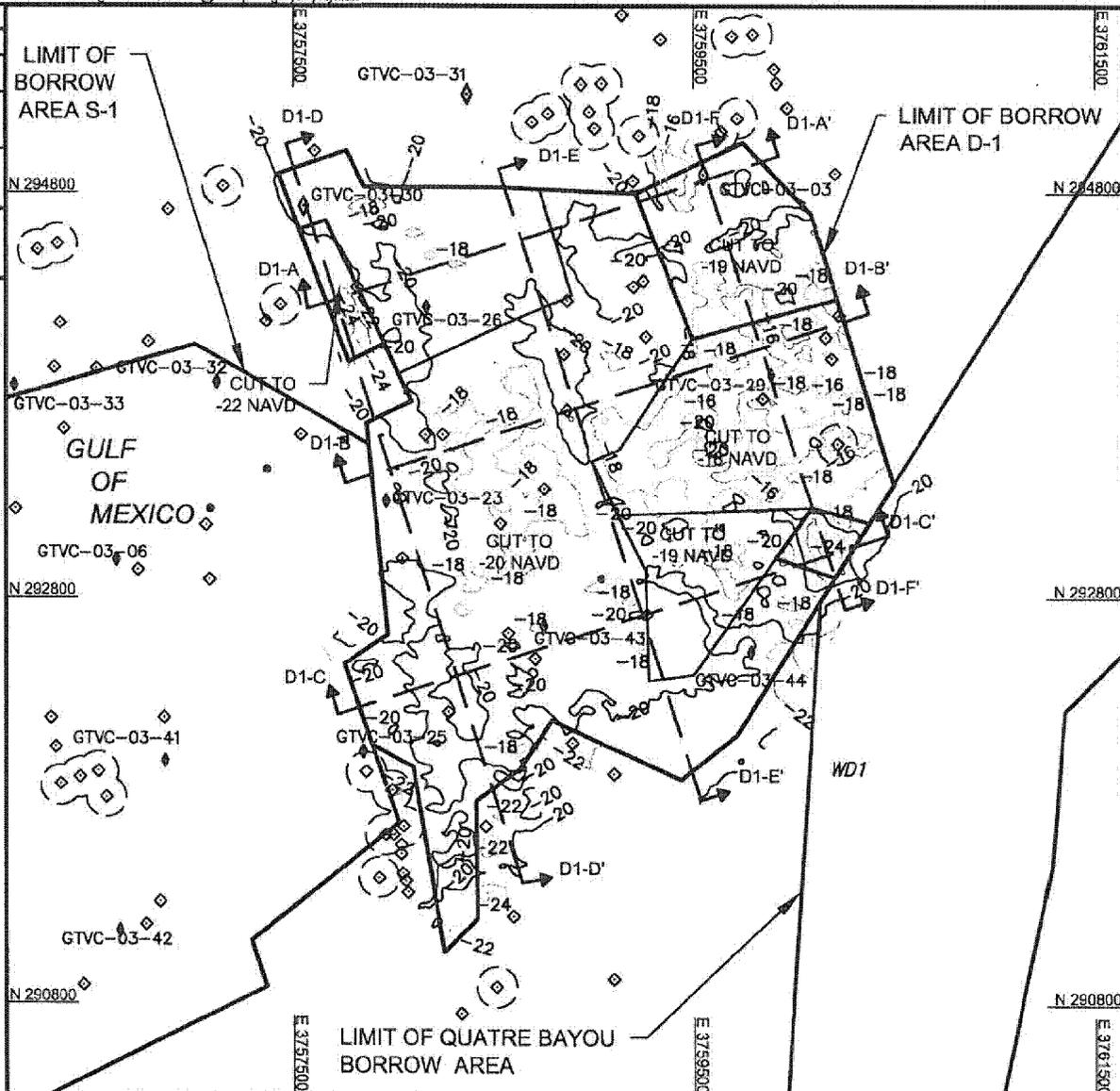
- NOTES:**
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 - ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988.
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 - CULTURAL RESOURCE SURVEY CONDUCTED JANUARY 2004 BY TIDEWATER ATLANTIC RESEARCH (TAR) AND CPE.
 - VOLUMES CALCULATED TO CUT DEPTH. SAND/SILT PERCENTAGE IS VARIABLE THROUGHOUT BORROW AREA. REFER TO VIBRACORES FOR SEDIMENT DISTRIBUTION WITHIN BORROW AREA.
 - CONTOURS REPRESENT BOTTOM OF SILT CLAY LAYER AND TOP OF SAND LAYER.

LEGEND:

- ◆ CPE 2002 VIBRACORE LOCATION
- WESTON 2001 VIBRACORE LOCATION
- ⊗ USGS VIBRACORE LOCATION
- ◇ MAGNETIC ANOMALY
- ⊕ MAGNETIC ANOMALY AREA OF AVOIDANCE (100' BUFFER)
- CROSS SECTION LINE LOCATION

0 400 800
GRAPHIC SCALE IN FT

COASTAL PLANNING & ENGINEERING, INC.
 2481 N.W. BOCA RATON BOULEVARD
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APPLICATION BY:
 NATIONAL MARINE FISHERIES SERVICE
 RICHARD HARTMAN
 C/O LSU, MILITARY SCIENCE BUILDING, ROOM 266
 BATON ROUGE, LA 70803
 (225) 389-0508
 FAX: (225) 389-0506

**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

DESIGNED BY: AW
 APPROVED BY: GT

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

D1 BORROW AREA
 MARSH FILL CUTS

DATE: 8/5/11
 SHEET 27 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052_Borrow Area PV.dwg - Nov 03, 2011 @ 2:09pm - gary.krystyniak

VOLUME SUMMARY (CY)			
	TOTAL VOLUME	SAND VOLUME	SILT VOLUME
DI BEACH FILL	1,931,000	1,531,000	400,000
DI MARSH FILL	1,393,000	200,000	1,193,000

AREA = 159.4 ACRES

DREDGE CUTS NOTED ON THIS SHEET REFER TO REMOVAL ELEVATION OF BEACH AND DUNE CONSTRUCTION MATERIAL

NOTES:

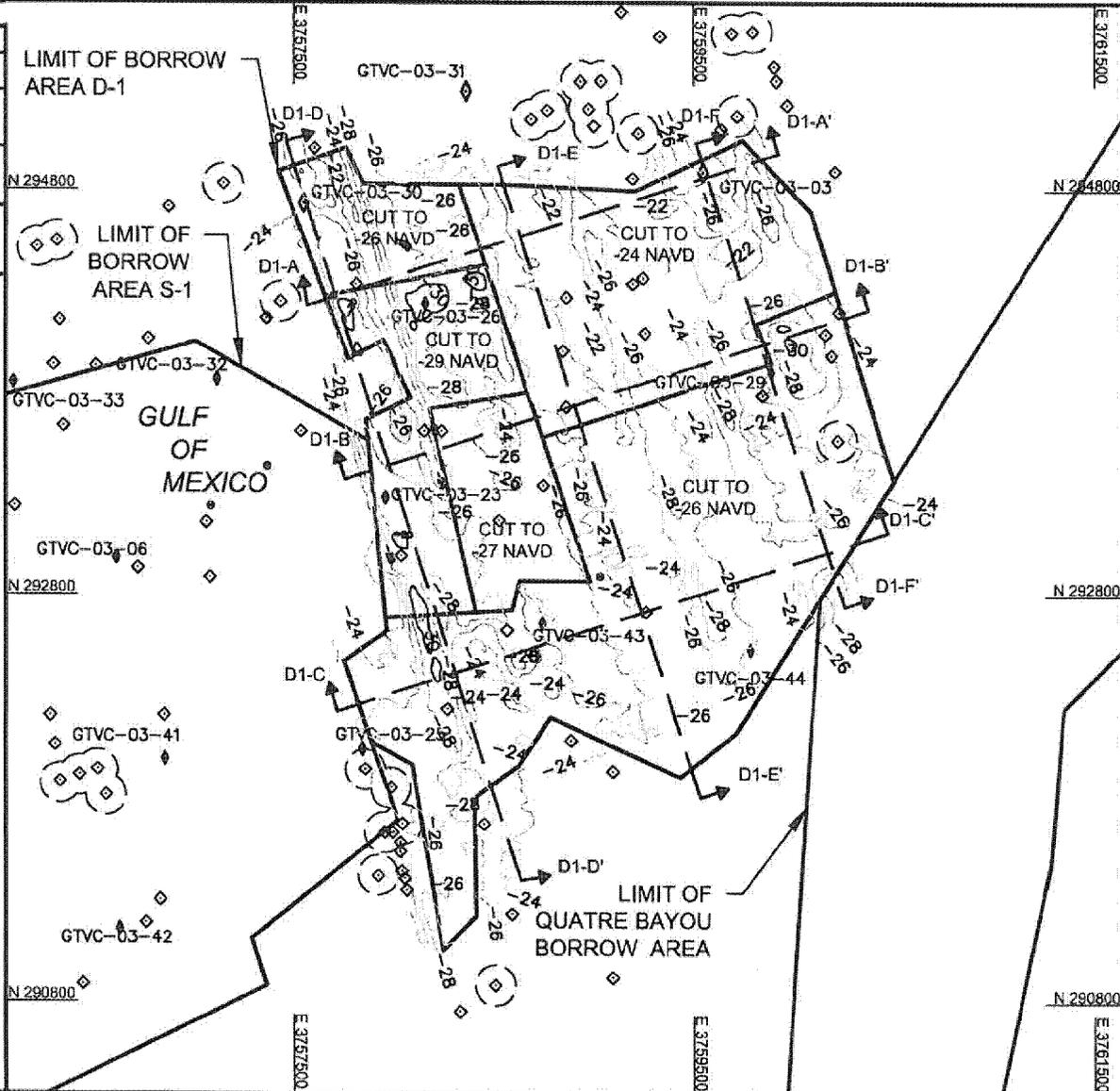
- COORDINATES SHOWN HEREON ARE IN FEET BASED ON LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 1983.
- ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988.
- DATE OF BATHYMETRIC SURVEY, SEISMIC SCAN, SIDE SCAN SONAR, AND MAGNETOMETER SURVEY: SEPTEMBER 2003, CONDUCTED BY CPE.
- CULTURAL RESOURCE SURVEY CONDUCTED JANUARY 2004 BY TIDEWATER ATLANTIC RESEARCH (TAR) AND CPE.
- VOLUMES CALCULATED TO CUT DEPTH. SAND/SILT PERCENTAGE IS VARIABLE THROUGHOUT BORROW AREA. REFER TO VIBRACORES FOR SEDIMENT DISTRIBUTION WITHIN BORROW AREA.
- CONTOURS REPRESENT BOTTOM OF SAND LAYER.

LEGEND:

- CPE 2002 VIBRACORE LOCATION
- WESTON 2001 VIBRACORE LOCATION
- USGS VIBRACORE LOCATION
- MAGNETIC ANOMALY
- MAGNETIC ANOMALY AREA OF AVOIDANCE (100' BUFFER)
- CROSS SECTION LINE LOCATION



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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

D1 BORROW AREA
 BEACH FILL CUTS
 DATE: 8/5/11
 SHEET 28 OF 37

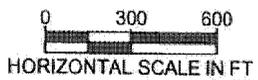
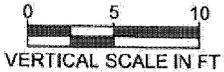
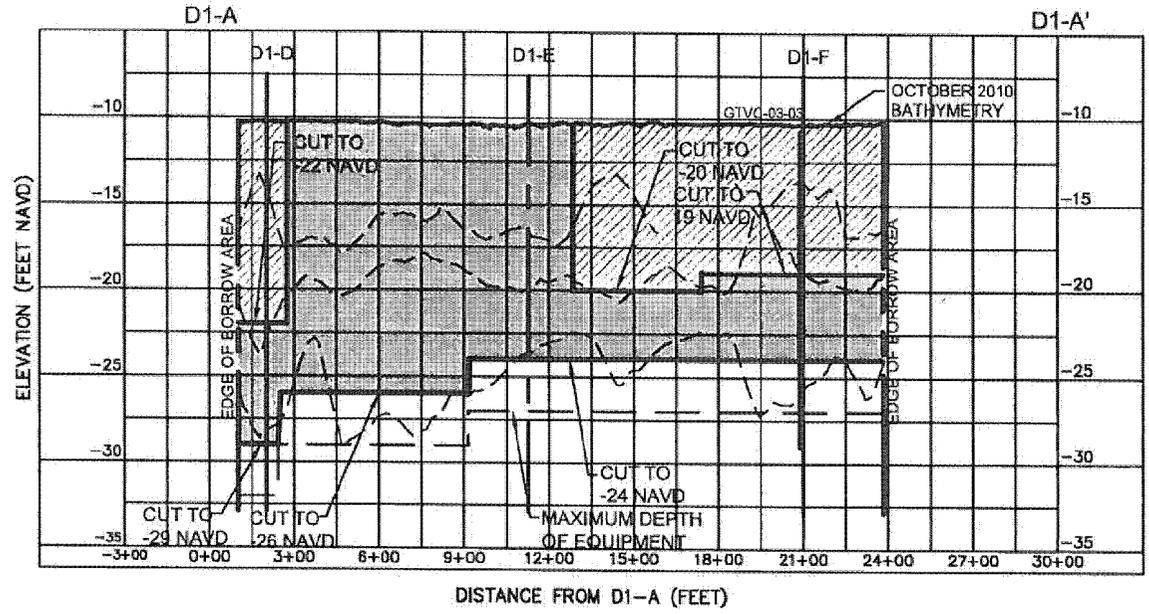
DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 28 OF 37



- LEGEND:**
- SEISMIC REFLECTOR
 - MAXIMUM DEPTH OF EQUIPMENT
 - [Stippled Box] BEACH FILL SEDIMENTS
 - [Hatched Box] MARSH FILL MATERIAL

- NOTES:**
1. SEE SHEETS 26 & 27 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
 3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

D1 BORROW AREA
 CROSS SECTION
 DATE: 8/5/11
 SHEET 29 OF 37

DRAWN BY: GK

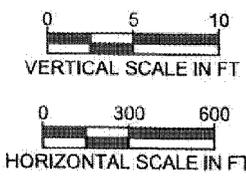
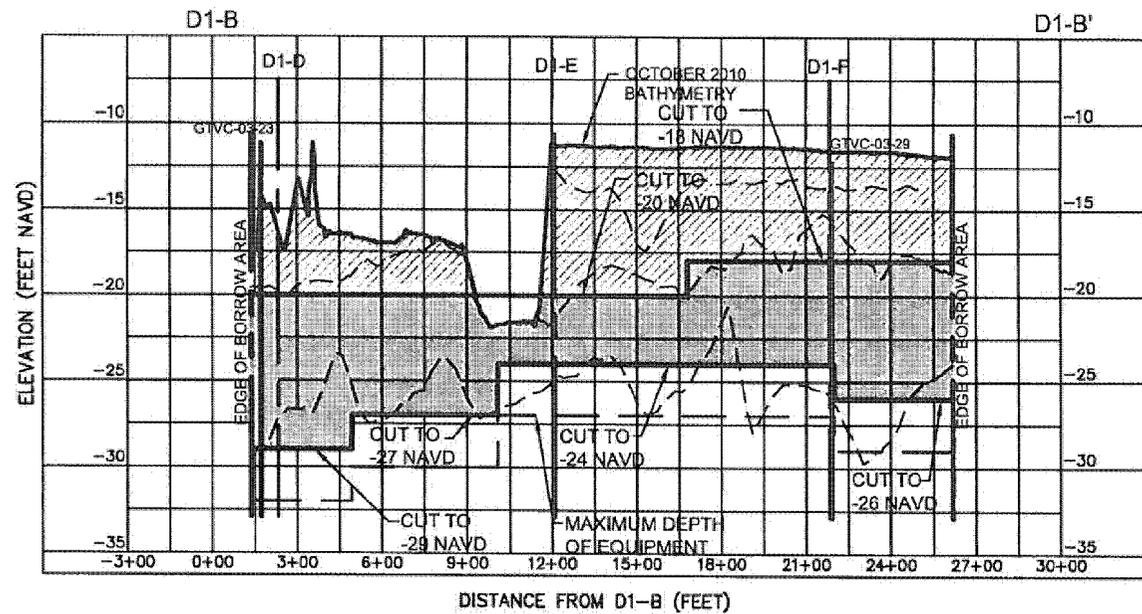
DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 29 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052_BA_X9_D1.dwg - Nov 03, 2011 @ 2:10pm - gary.krystyniak



- LEGEND:**
- SEISMIC REFLECTOR
 - MAXIMUM DEPTH OF EQUIPMENT
 - [Hatched Box] BEACH FILL SEDIMENTS
 - [Dotted Box] MARSH FILL MATERIAL

- NOTES:**
1. SEE SHEETS 26 & 27 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
 3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

D1 BORROW AREA
 CROSS SECTION
 DATE: 8/5/11
 SHEET 30 OF 37

DRAWN BY: GK

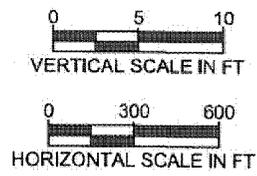
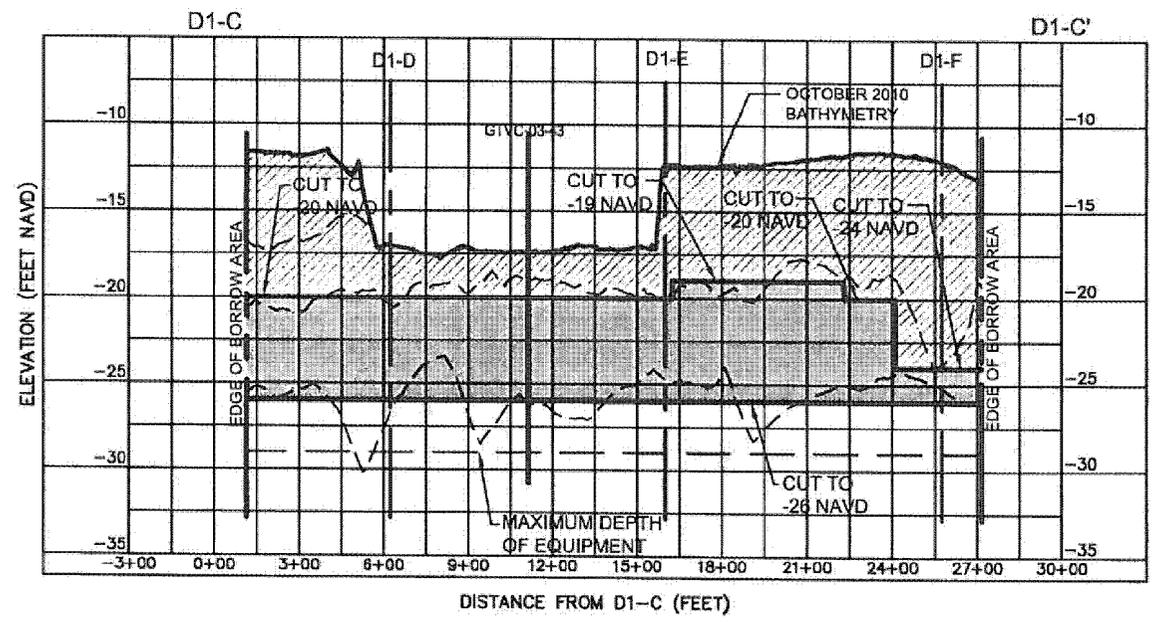
DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 30 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052_BA_XS_D1.dwg - Nov 03, 2011 @ 2:11pm - gary.krystyniak



- LEGEND:**
- SEISMIC REFLECTOR
 - MAXIMUM DEPTH OF EQUIPMENT
 - [Hatched Box] BEACH FILL SEDIMENTS
 - [Dotted Box] MARSH FILL MATERIAL

- NOTES:**
1. SEE SHEETS 26 & 27 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
 3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

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 FAX: (225) 389-0506

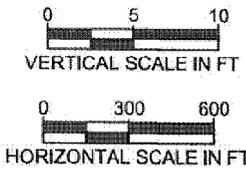
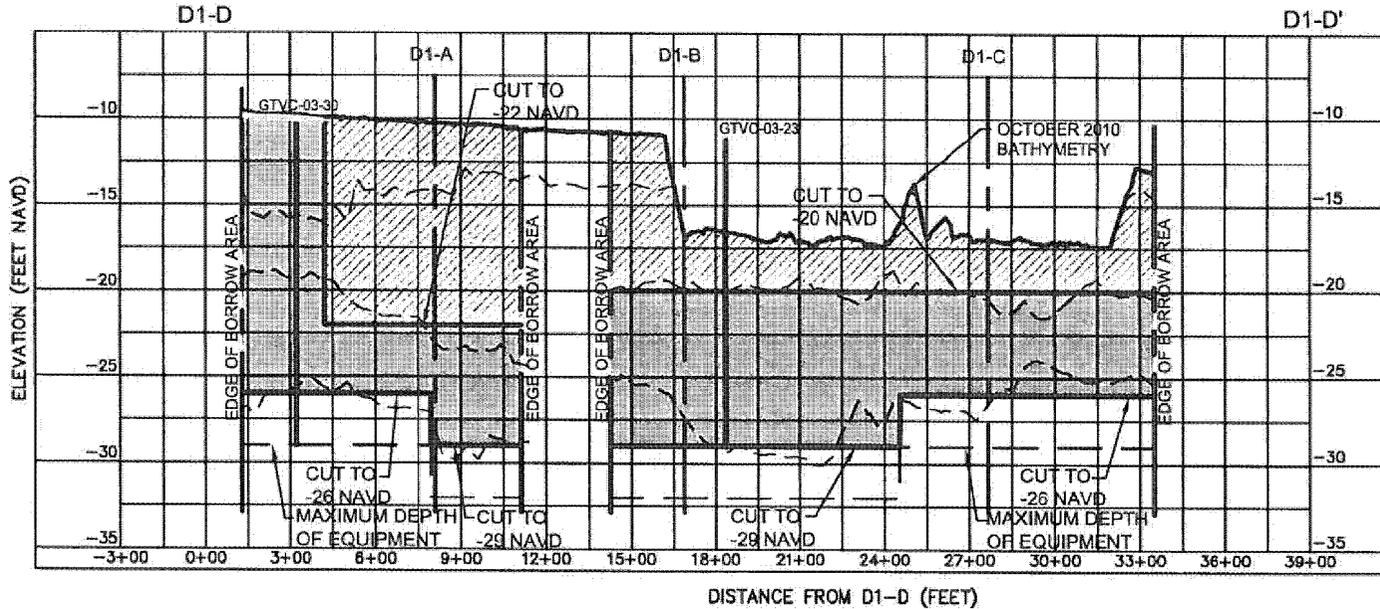
**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

D1 BORROW AREA
 CROSS SECTION

DATE: 8/5/11
 SHEET 31 OF 37

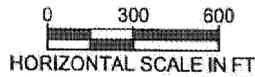
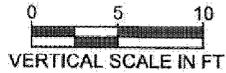
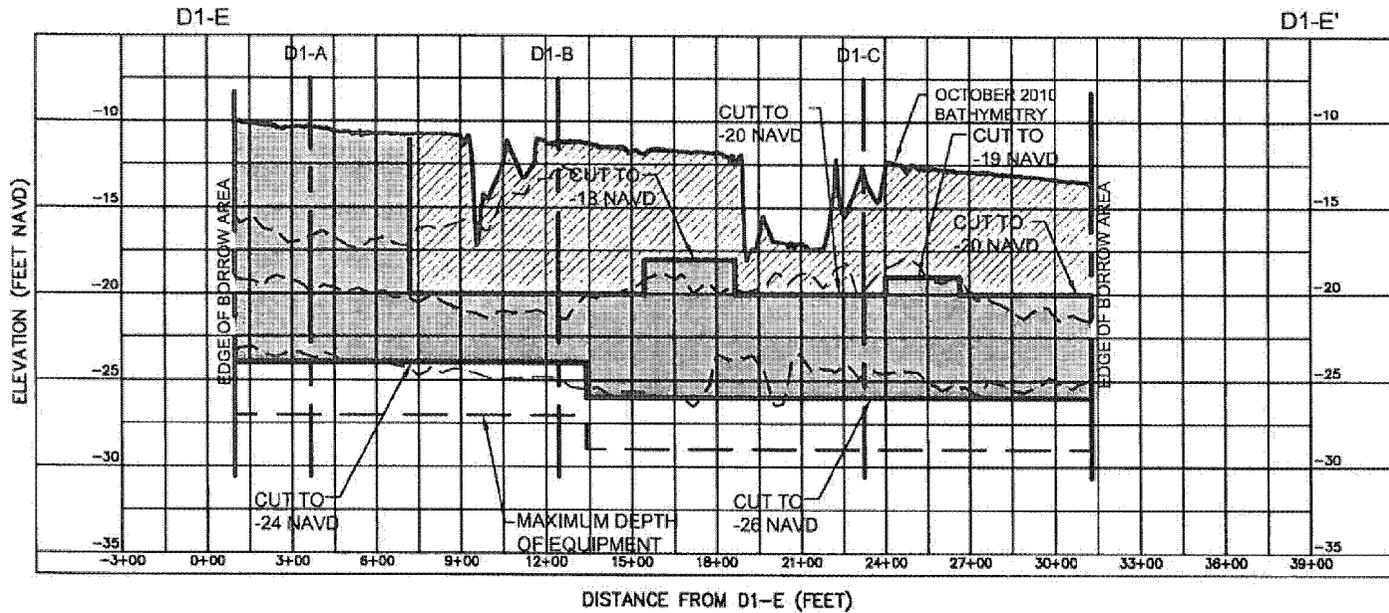


- LEGEND:**
- SEISMIC REFLECTOR
 - MAXIMUM DEPTH OF EQUIPMENT
 - BEACH FILL SEDIMENTS
 - MARSH FILL MATERIAL

- NOTES:**
1. SEE SHEETS 26 & 27 FOR LOCATIONS OF CROSS SECTION LINES
 2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
 3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

COASTAL PLANNING & ENGINEERING, INC.
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APPLICATION BY: NATIONAL MARINE FISHERIES SERVICE RICHARD HARTMAN C/O LSU, MILITARY SCIENCE BUILDING, ROOM 266 BATON ROUGE, LA 70803 (225) 389-0508 FAX: (225) 389-0506		COASTAL PROTECTION & RESTORATION AUTHORITY RESTORATION ENGINEERING DIVISION 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801		CHENIER RONQUILLE BARRIER ISLAND RESTORATION PROJECT		D1 BORROW AREA CROSS SECTION	
DRAWN BY: GK		DESIGNED BY: AW		APPROVED BY: GT		STATE PROJECT NUMBER: BA-76	
				FEDERAL PROJECT NUMBER: BA-76		DATE: 8/5/11	
						SHEET 32 OF 37	



LEGEND:

- SEISMIC REFLECTOR
- MAXIMUM DEPTH OF EQUIPMENT
- ▨ BEACH FILL SEDIMENTS
- ▩ MARSH FILL MATERIAL

NOTES:

1. SEE SHEETS 26 & 27 FOR LOCATIONS OF CROSS SECTION LINES
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

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 C.O.A. LA. #2531
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

D1 BORROW AREA
 CROSS SECTION
 DATE: 8/5/11

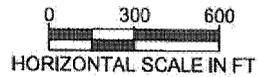
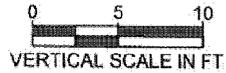
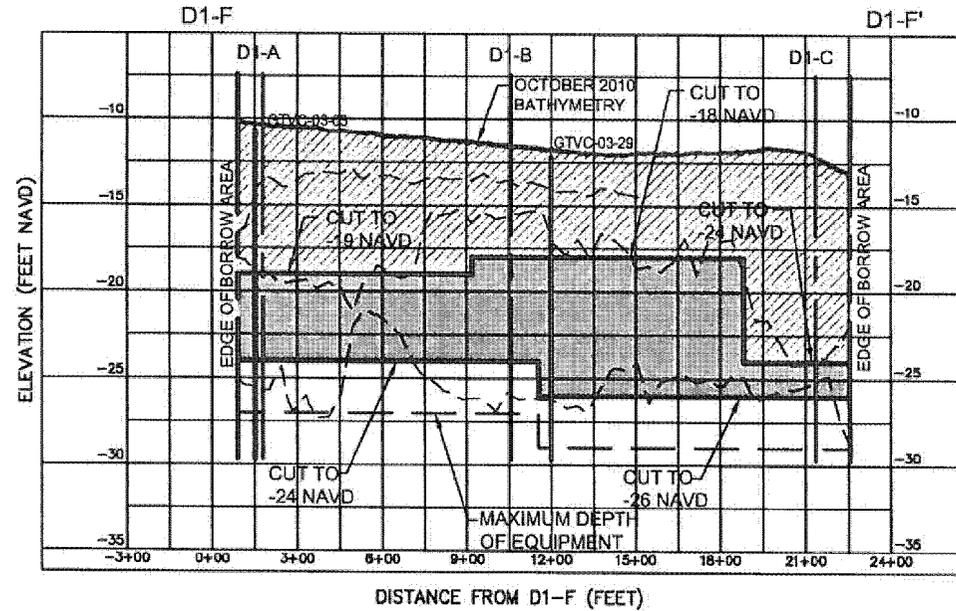
DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 33 OF 37



LEGEND:

- SEISMIC REFLECTOR
- MAXIMUM DEPTH OF EQUIPMENT
- ▨ BEACH FILL SEDIMENTS
- ▨ MARSH FILL MATERIAL

NOTES:

1. SEE SHEETS 26 & 27 FOR LOCATIONS OF CROSS SECTION LINES
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

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 450 LAUREL STREET
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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

D1 BORROW AREA
 CROSS SECTION
 DATE: 8/5/11

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 34 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052 QUATRE BA_PV.dwg - Nov 03, 2011 @ 2:19pm - gary.krystyniak

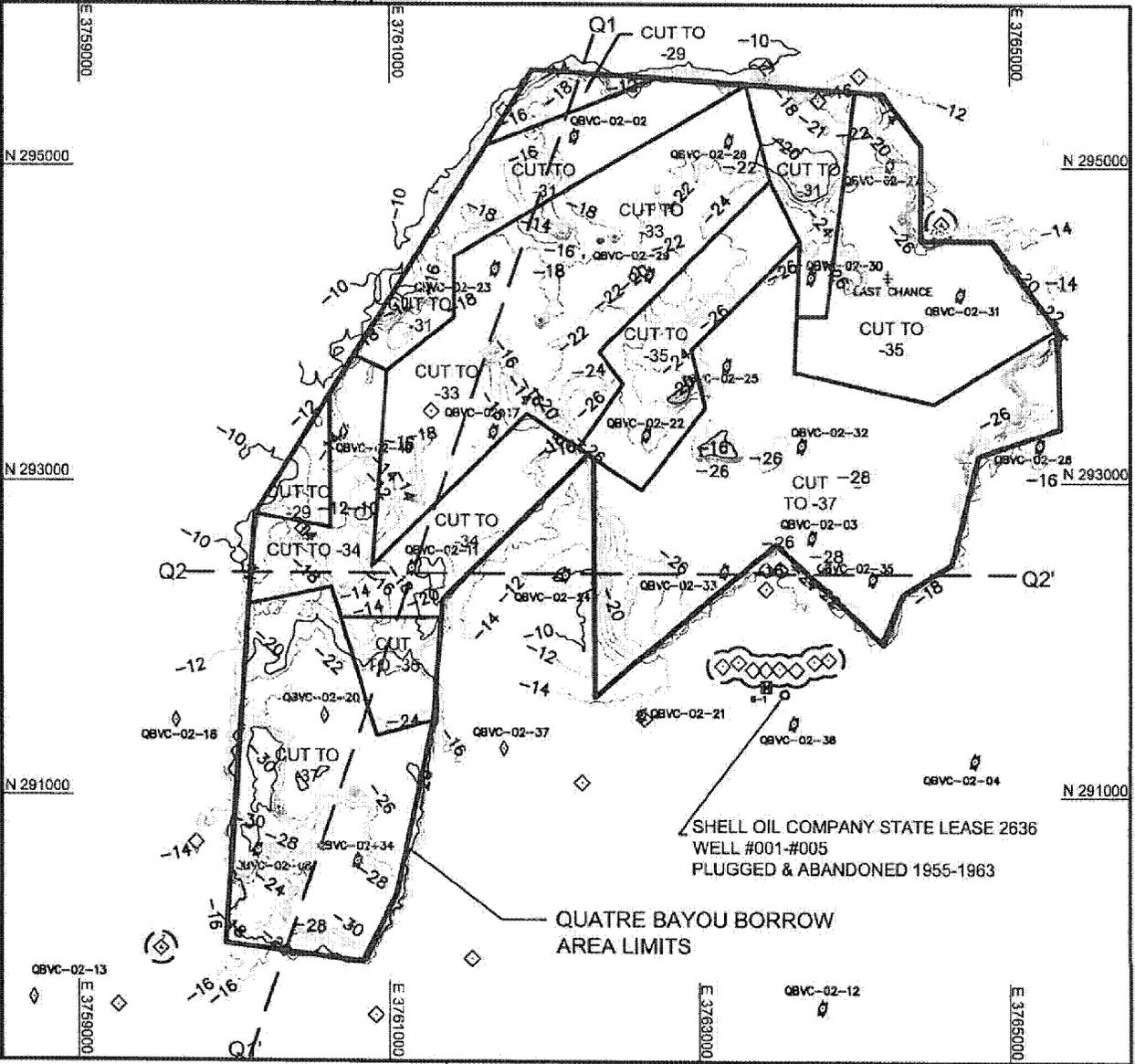
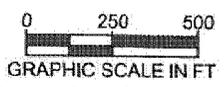
VOLUME SUMMARY		
TOTAL VOLUME	SAND VOLUME	SILT VOLUME
QUATRE BAYOU	5,088,000	5,088,000

AREA = 349.5 ACRES

DREDGE CUTS NOTED ON THIS SHEET REFER TO REMOVAL ELEVATION OF MARSH CONSTRUCTION MATERIAL.

- NOTES:**
- COORDINATES SHOWN HEREON ARE BASED ON LOUISIANA SOUTH STATE PLANE COORDINATE SYSTEM, NAD 1983.
 - ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON NAVD 1988.
 -
 - DATE OF BATHYMETRIC SURVEY, DECEMBER 2006 CONDUCTED BY WEEKS MARINE, INC.
 - CULTURAL RESOURCE SURVEY CONDUCTED MAY 23-25, 2003 BY TIDEWATER ATLANTIC RESEARCH (TAR) AND CPE.
 - BORROW AREA PREVIOUSLY DREDGED. VIBRACORES MAY NOT BE INDICATIVE OF MATERIAL PRESENT.

- LEGEND:**
- ◇ CPE 2002 VIBRACORE LOCATION
 - ◇ MAGNETIC ANOMALY
 - ◇ (with circle) MAGNETIC ANOMALY AREA OF AVOIDANCE (100' BUFFER)
 - ⊠ SONAR CONTACT AND SITE REFERENCE NUMBER
 - WELL HEAD
 - ⊕ SHIP WRECK "LAST CHANCE" FROM NOAA CHART 11358 (NOT CONFIRMED BY CULTURAL RESOURCE SURVEY)



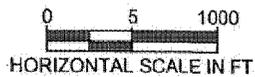
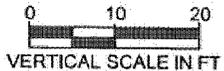
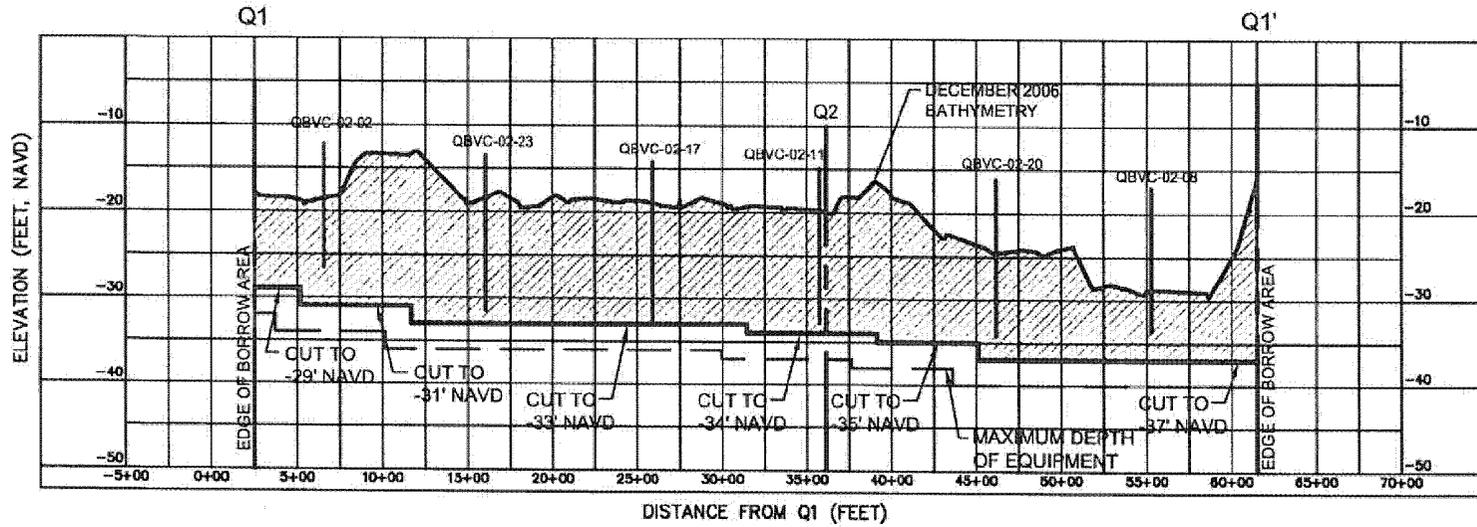
COASTAL PLANNING & ENGINEERING, INC.
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 C.O.A. LA #2631
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**COASTAL PROTECTION & RESTORATION AUTHORITY
 RESTORATION ENGINEERING DIVISION**
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76
 FEDERAL PROJECT NUMBER: BA-76

QUATRE BAYOU BORROW AREA
 BATHYMETRY
 DATE: 8/5/11
 SHEET 35 OF 37



LEGEND:

- MAXIMUM DEPTH OF EQUIPMENT
- [Hatched Box] BEACH FILL SEDIMENTS
- [Diagonal Line Box] MARSH FILL MATERIAL

NOTES:

1. SEE SHEETS 26 & 27 FOR LOCATIONS OF CROSS SECTION LINES
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
3. CORES MAY NOT FALL DIRECTLY ON CROSS SECTION LINE, BUT ARE LOCATED SUFFICIENTLY CLOSE TO REPRESENT SIMILAR MATERIAL.

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**COASTAL PROTECTION & RESTORATION AUTHORITY
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 450 LAUREL STREET
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CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT
 STATE PROJECT NUMBER: BA-76

QUATRE BAYOU BORROW AREA
 CROSS SECTION
 DATE: 8/5/11

DRAWN BY: GK

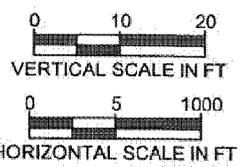
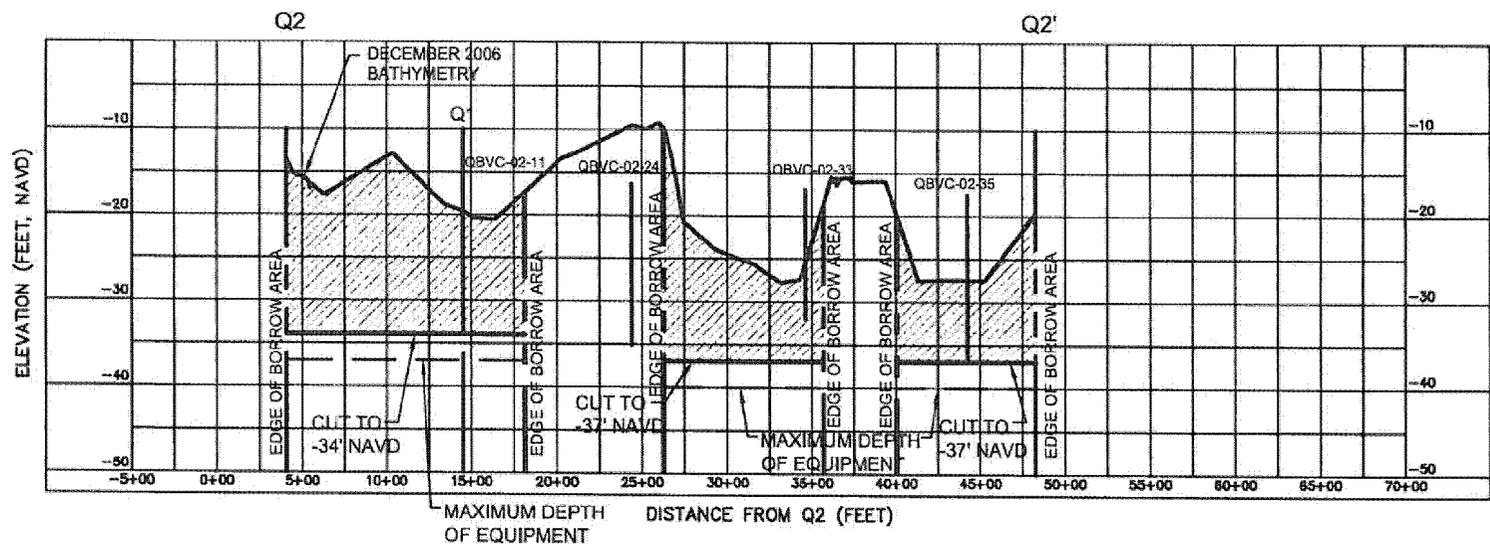
DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 36 OF 37

P:\Louisiana\790038 Chenier Ronquille Shoreline Restoration\CAD\Permits\790052 QUATRE BA_XS.dwg - Nov 03, 2011 @ 2:21pm - gary.krystyniak



LEGEND:

- — MAXIMUM DEPTH OF EQUIPMENT
- [Hatched Box] BEACH FILL SEDIMENTS
- [Cross-hatched Box] MARSH FILL MATERIAL

NOTES:

1. SEE SHEETS 26 & 27 FOR LOCATIONS OF CROSS SECTION LINES
2. ELEVATIONS SHOWN HEREON ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).
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COASTAL PLANNING & ENGINEERING, INC.
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**COASTAL PROTECTION & RESTORATION AUTHORITY
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 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801

CHENIER RONQUILLE
 BARRIER ISLAND RESTORATION
 PROJECT

STATE PROJECT NUMBER: BA-76

QUATRE BAYOU BORROW AREA
 CROSS SECTION

DATE: 8/5/11

DRAWN BY: GK

DESIGNED BY: AW

APPROVED BY: GT

FEDERAL PROJECT NUMBER: BA-76

SHEET 37 OF 37